



**General Specifications**

**1. Responsibility**

The customer shall be solely responsible, at its expense for preparation of site, including any required structural alterations. The site preparation shall be in accordance with plans and specifications provided by Philips. Compliance with all safety electrical and building codes relevant to the equipment and its installation is the sole responsibility of customer. The customer shall advise Philips of conditions at or near the site which could adversely affect the carrying out of the installation work and shall ensure that such conditions are corrected and that the site is fully prepared and available to Philips before the installation work is due to begin. The customer shall provide all necessary plumbing, carpentry work, or conduit wiring required to attach and install products ready for use.

**2. Permits**

Customer shall obtain all permits and licenses required by federal, state/provincial or local authorities in connection with the construction, installation and operation of the products and related rules, regulations, shall bear any expense in obtaining same or in complying with any ordinances and statutes.

**3. Radiation Protection**

The customer or his contractor, at his own expense, shall obtain the service of a licensed radiation physicist to specify radiation protection. (X-Ray Tube output 125 KVp max.)

**4. Asbestos and Other Toxic Substances**

Philips assumes no hazardous waste (i.e., PCB's in existing transformers) exists at the site. If any hazardous material is found, it shall be the sole responsibility of the customer to properly remove and dispose of this material at its expense. Any delays caused in the project for this special handling shall result in Philips time period for completion being extended by like period of time. Philips assumes that no asbestos material is involved in this project in any ceilings, walls or floors. If any asbestos material is found anywhere on the site, it shall be the customer's sole responsibility to properly remove and/or make safe this condition, at the customer's sole expense.

**5. Labor**

In the event local labor conditions make it impossible or undesirable to use Philips' regular employees for such installation and connection, such work shall be performed by laborers supplied by the customer, or by an independent contractor chosen by the customer at the customer's expense, and in such case, Philips agrees to furnish adequate engineering supervision for proper completion of the installation.

**6. Schedule**

The general contractor should provide Philips with a schedule of work to assist in the coordination of delivery of Philips supplied products which are to be installed by the contractor and delivery of the primary equipment.

**7. Extended Installation or Turnkey Work by Philips**

Any room preparation requirements for Philips equipment indicated on these drawings is the responsibility of the customer. If an extended installation or turnkey contract exists between Philips and the customer for room preparation work required by the equipment represented on these drawings, some of the responsibilities of the customer as depicted in these drawings may be assumed by Philips. In the event of a conflict between the work described in the turnkey contract workscope and these drawings, the turnkey contract workscope shall govern.

**8. Infection Control and Interim Life Safety Measures**

Compliance with all Infection Control and Interim Life Safety Measures shall be the sole responsibility of the customer. The customer shall provide all means and methods necessary for compliance with Infection Control (IC) and Interim Life Safety Measures (ILSM) in connection with the construction and installation/operation of the products shown herein and shall bear any expenses related to same.

(14.0)

**Minimum Site Preparation Requirements**

A smooth efficient installation is vital to Philips and their customers. Understanding what the minimum site preparation requirements are will help achieve this goal. The following list clearly defines the requirements which must be fulfilled before the installation can begin.

1. Walls to be painted or covered, baseboards installed, floors to be tiled and/or covered, ceiling shall have grid tiles and lighting fixtures installed and operational.
2. Doors and windows, especially radiation protection barriers, installed and finished with locksets operational.
3. All electrical convenience, conduit, raceway, knockouts, cable openings, chase nipples, and junction boxes installed and operational.
4. Incoming mains power operational and connected to room x-ray breaker.
5. 120V convenience outlets operational.
6. All support structure correctly installed. All channels, pipes, beams and/or other supporting devices should be level, parallel, and free of lateral or longitudinal movements.
7. All contractor supplied cables pulled and terminated.
8. A dust-free environment in and around the procedure room.
9. All HVAC (heating, ventilating and air conditioning) installed and operational as per specifications.
10. Architectural features such as computer floor, wood floor, casework, bulkheads, installed and finished. When technical cabinets are installed in a closet with doors, it is suggested that the customer install a temperature alarm in the event of an air conditional failure.
11. All plumbing installed and finished.
12. Philips does not install or connect developing tanks, automatic processors or associated equipment, built in illuminators, cassette pass boxes, loading benches and cabinets, lead protective screens, panels or lead glass window and frame. This is to be done by the customer/contractor.
13. Clear door openings for moving equipment into the building must be 42" (1067mm) W x 82" (2083mm) H min. 48" (1219mm) W x 82" (2083mm) H rec., Or larger contingent on an 8'-0" (2438mm) corridor width.
14. Countertop is 30" (765mm) for seated height and 36" (915mm) for standing height.

**Note**

Once Philips has moved equipment into the suite and started the installation, the contractor shall schedule his work around the Philips installation team on site. It is suggested that a telephone be provided in the room to receive telephone calls. This would alleviate facility staff from answering calls for Philips personnel.

**Remote Service Diagnostics**

Medical imaging equipment to be installed by Philips Medical is equipped with a service diagnostic feature which allows for remote and on site service diagnostics. To establish this feature, a RJ45 type ethernet 10/100/1000 Mbit network connector must be installed as shown on plan. Access to customer's network via their remote access server is needed for Remote Service Network (RSN) connectivity. All cost with this feature are the responsibility of the customer.

(12.0)

**HVAC Requirement for General Equipment Locations**

Operation	
Temperature	50°F (10°C) to 86°F (30°C)
Temperature gradient	Max. 1°F / Minute (0.5°C / Minute)
Humidity (non-condensing) Humidity shall be stable within 10%	20% to 80%
Exam Room	*6483 BTU/hr
Equipment Room	*8189 BTU/hr
Control Room	*1706 BTU/hr

\*Average heat emission during clinical use  
Data applicable for basic system:  
Large monitor + 4 x small monitor in Monitor Ceiling Suspension  
1 workstation + 2 x small monitor in Control Room

Add 1706 BTU/hr for additional large monitor  
Add 273 BTU/hr for additional small monitor  
Add 1024 BTU/hr for additional workstation

Equipment's designed airflow is from bottom to top and front to back. Please design the air handling in the rack cabinet equipment area accordingly.

(14.0)

**Electrical Requirements  
Mains 40E Cabinet**

- Power Output: 100kW
- Supply Configuration: 3 phase, identical 3 wire power and isolated unity ground with bonding conductor, delta (preferred) or wye
- Nominal Line Voltage: 480 VAC, 60 Hz
- Branch Power Requirement: 225 kVA
- Circuit Breaker: 3 phase, Type D 125 A with long-time delay and shunt trip

(14.2)

**Remote Control of Room Lighting**

The control of customer lighting must incorporate an electrical isolation system such as demonstrated on Sheet ED3. Lighting scheme is the responsibility of the customer.

(12.0)

**Project Details**

Drawing Number  
**N-WES140162 C**  
Date Drawn: 11/14/2014  
Quote: 1-ZMC9DA Rev. 2  
Order: 6600224430.010000

**Philips Contacts**

Project Manager: John Wright  
Contact Number: (214) 704-8619  
Email: john.wright@philips.com  
Drawn By: Laura Phillips

**Project  
Allura FD20 Ceiling**

**VA Oklahoma City  
Oklahoma City, OK  
-Room 1 1st Floor**

**AN**



Equipment Legend				
A Furnished and installed by Philips B Furnished by customer/contractor and installed by customer/contractor C Installed by customer/contractor D Furnished by Philips and installed by contractor E Existing F Future G Optional item furnished by Philips				
	Equipment Designation		Detail Sheet	
		Description	Weight (lbs)	Heat Load (btu/hr)
A	SP	Clea Stand	2557	1706 AD2
A	MSA	Angio Diagnost 7 with Pivot and Tilt	1693	205 AD2
A	ME	Certeray iX Generator Cabinet	320	2971 AD3
A	MP	Peripheral 40E Cabinet	441	2049 AD3
A	MA	Mains 40E Cabinet	826	5464 AD3
A	MB	Image 40E Cabinet	441	1877 AD3
A	CY	Viewing/Control	126	567 AD3
A	DB	Documentation Box - Mounted on Wheels (Final location to be coordinated with customer and/or local Philips Service)	176	0 AD4
A	ATY	Exam Room Auxiliary Box	7	1.7 AD4
A	TV	58" LCD Monitor Suspension	603	1020 AD4
A	VB1	Video Connection Box	11	34 AD4
	~			
A	VB9	Video Connection Box	11	34 AD4
A	MAV	Mavig Ceiling Track w/ Radiation Shield and M LED 3MC Surgical Light	167	350 AD5
A	TR	M LED 3MC Transformer	17	- AD5
D	UPS	UPS Cabinet - 25 kVA	998	AD6
D	UPC	Universal Power Controller - 25 kVA	1020	11564 AD6
D	RSP	Remote Status Panel (for UPS)	12	50 AD6
D	SWC	Knife Switch	22	- AD6
A	DBS	Dose Aware - Base Station	3.2	85 AD5
A	TV2	One LCD Monitor Carriage	68	239 AD5

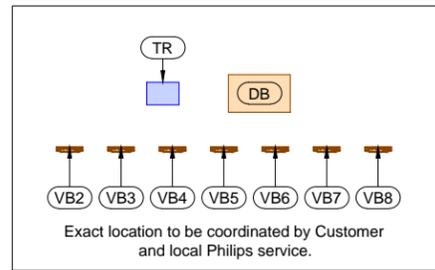
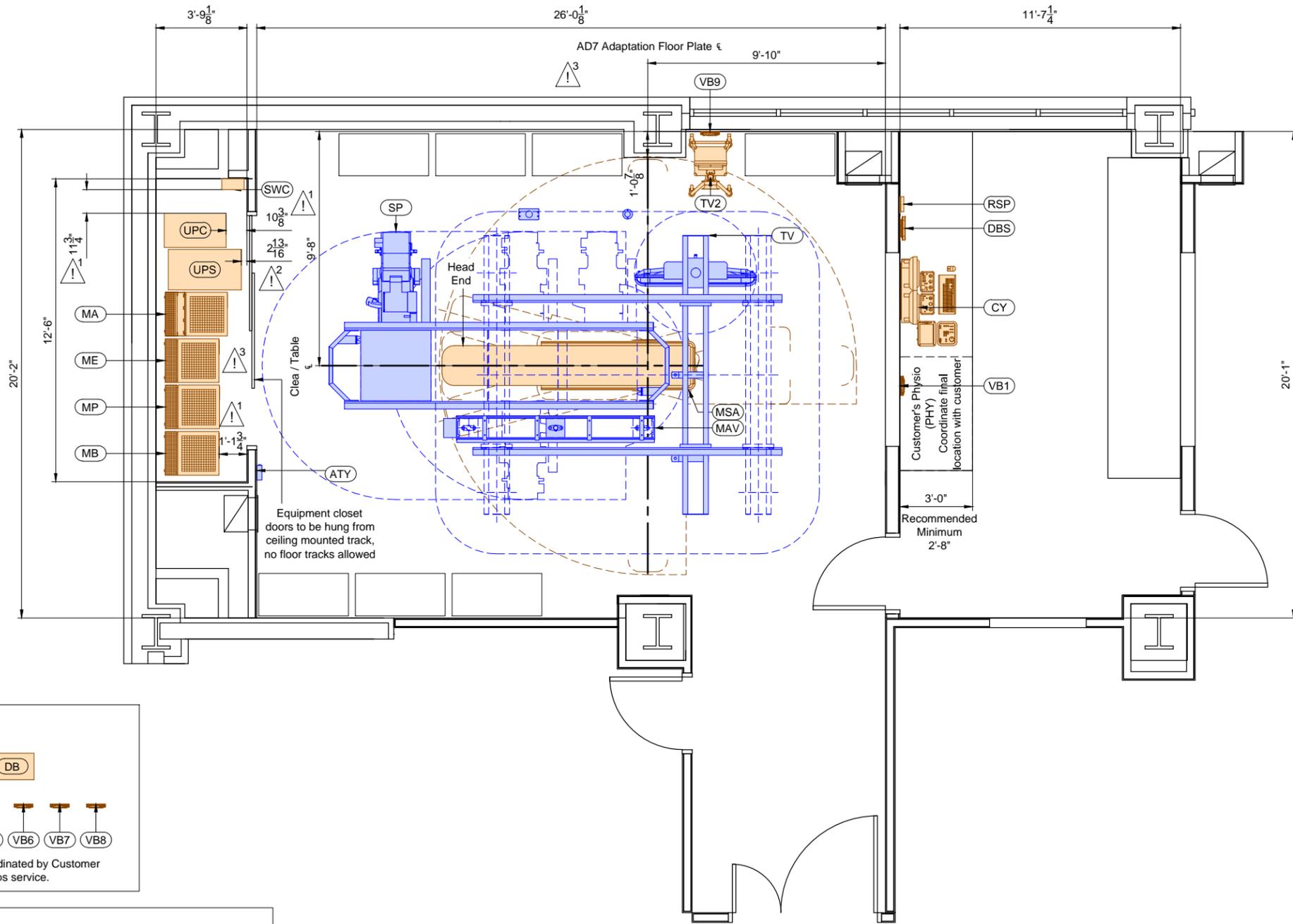
**AL**

**Project Details**  
 Drawing Number  
**N-WES140162 C**  
 Date Drawn: 11/14/2014  
 Quote: 1-ZMC9DA Rev. 2  
 Order: 6600224430.010000

**Philips Contacts**  
 Project Manager: John Wright  
 Contact Number: (214) 704-8619  
 Email: john.wright@philips.com  
 Drawn By: Laura Phillips

**Project**  
**Allura FD20 Ceiling**  
**VA Oklahoma City**  
 Oklahoma City, OK  
 -Room 1 1st Floor





**Planning Issues and Considerations**

- !1 N.E.C. requires a clear floor space of 3'-0" (915mm) in front of electrical equipment and 3'-6" (1070mm) in front electrical equipment when facing each other. Verify all applicable code(s) with the architect of record.
- !2 Minimum clearance for "UPS" ventilation is 20" (510mm) in front of "UPS".
- !3 Exact equipment configuration to be verified with local Philips Sales. System release 8.2 and AD7 Adaptation plate are not listed on order but are shown due to Philips Project Manager request.

**General Notes**

- \* Counters and cabinetry shown to be supplied and installed by contractor.
- \* Architect to coordinate with end users/technicians to determine final placement of control desk components prior to installation in order to avoid rework. Architect to coordinate with Philips Project Manager to reflect final placement on Philips drawings.

# Equipment Layout

Required Unistrut Height: 9' - 6  $\frac{3}{16}$ " +  $\frac{3}{8}$ " / -0 (2900mm, +10mm / -0)  
 Unistrut height measured from finished floor to bottom of Unistrut.



	Source	Location	Displayed
VB1	Physio	Control	FlexVision
VB2	IH	Control	FlexVision
VB3			
VB4			
VB5			
VB6			
VB7			
VB8			
VB9 (output)	MB	Exam	TV2

**Project**  
 Allura FD20 Ceiling

VA Oklahoma City  
 Oklahoma City, OK  
 -Room 1 1st Floor

**Philips Contacts**

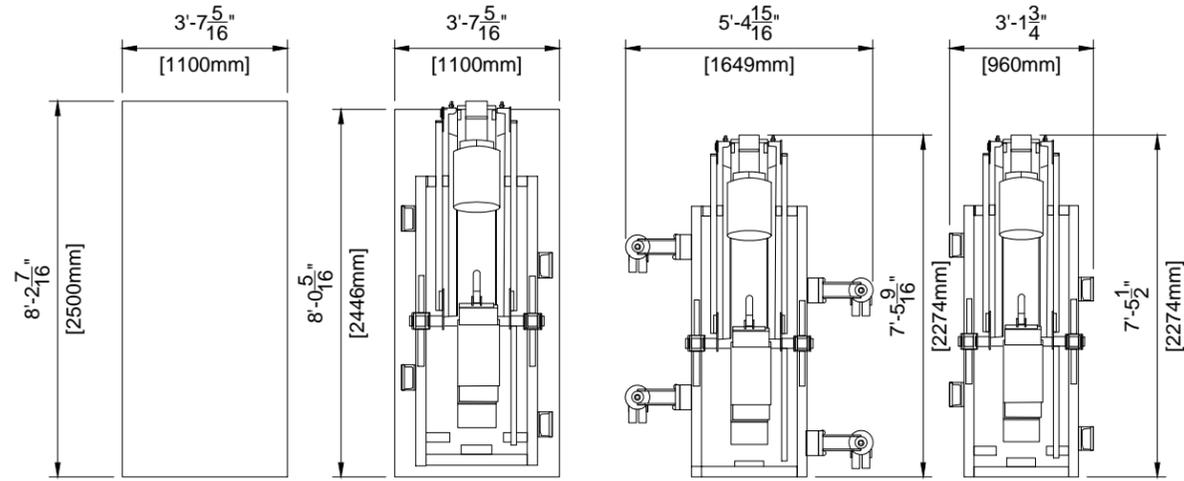
Project Manager: John Wright  
 Contact Number: (214) 704-8619  
 Email: john.wright@philips.com  
 Drawn By: Laura Phillips

**Project Details**

Drawing Number  
**N-WES140162 C**  
 Date Drawn: 11/14/2014  
 Quote: 1-ZMC9DA Rev. 2  
 Order: 6600224430.010000

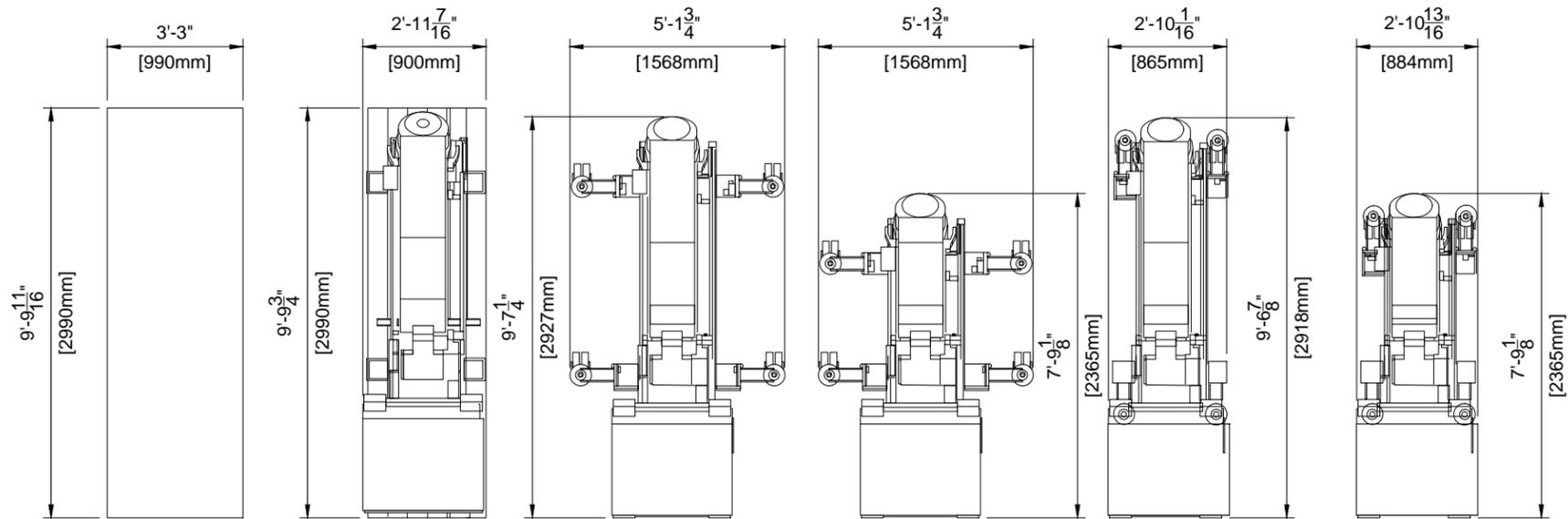
**A1**

**Detail - Clea Ceiling (C-ARM) Transport Details**



Transport Possibilities				
	Crate	Pallet	Kick Wheels Wide	Kick Wheels Small
<b>Height</b>	77.95" (1980mm)	76.22" (1936mm)	69.02" (1753mm)	77.76" (1975mm)
<b>Weight</b>	2050 lbs (930 kg)	1940 lbs (880 kg)	2061 lbs (935 kg)	1764 lbs (800 kg)

**Detail - Clea Ceiling (L-ARM) Transport Details**



Transport Possibilities						
	Crate	Pallet	Klick Wheels Wide	Klick Wheels Wide Elevator	Klick Wheels Small	Klick Wheels Small Elevator
<b>Height</b>	57.09" (1450mm)	54.80" (1392mm)	49.25" (1251mm)	79.53" (2020mm)	49.25" (1251mm)	79.53" (2020mm)
<b>Weight</b>	2094 lbs (950 kg)	1973 lbs (895 kg)	1896 lbs (860 kg)	1896 lbs (860 kg)	1896 lbs (860 kg)	1896 lbs (860 kg)

© Koninklijke Philips Electronics N.V. 2012. All rights reserved. Reproduction in whole or in part is prohibited without prior written consent of the copyright holder.

THIS SHEET IS PART OF THE DOCUMENT SET LISTED ON SHEET C1 AND SHOULD NOT BE SEPARATED.

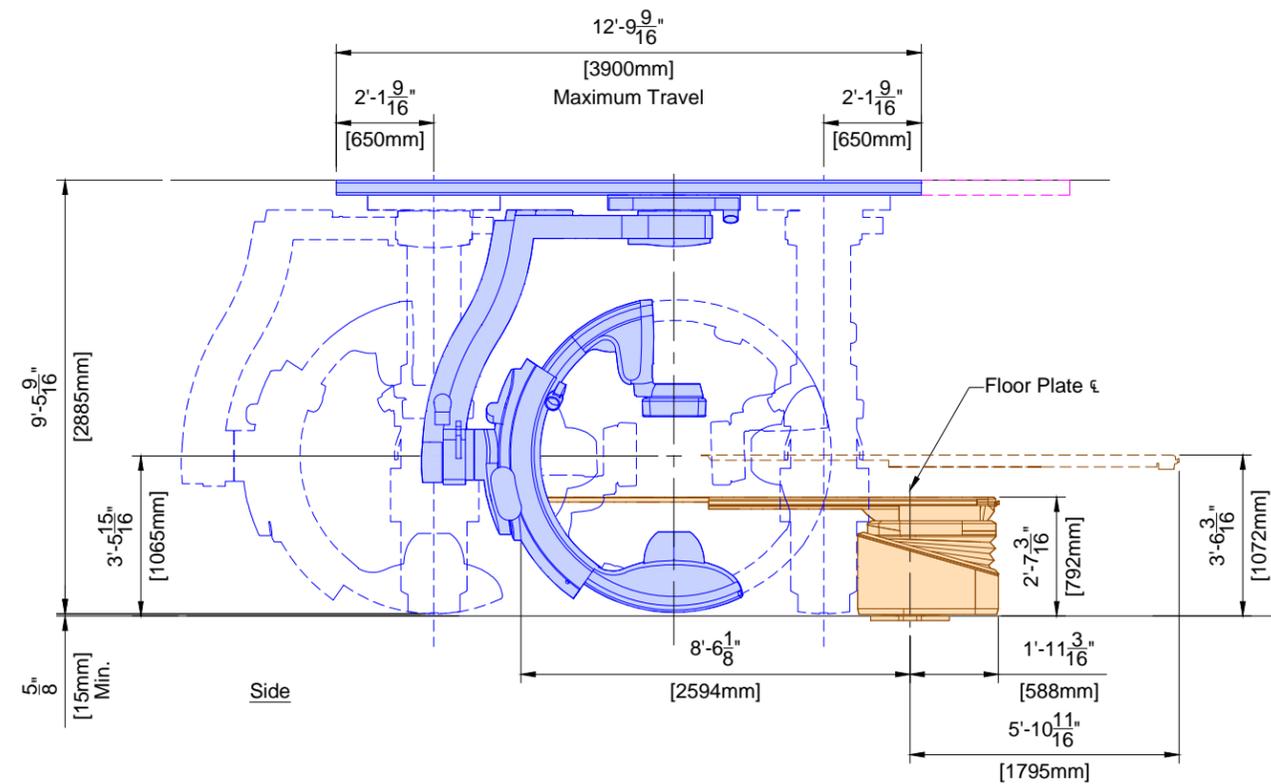
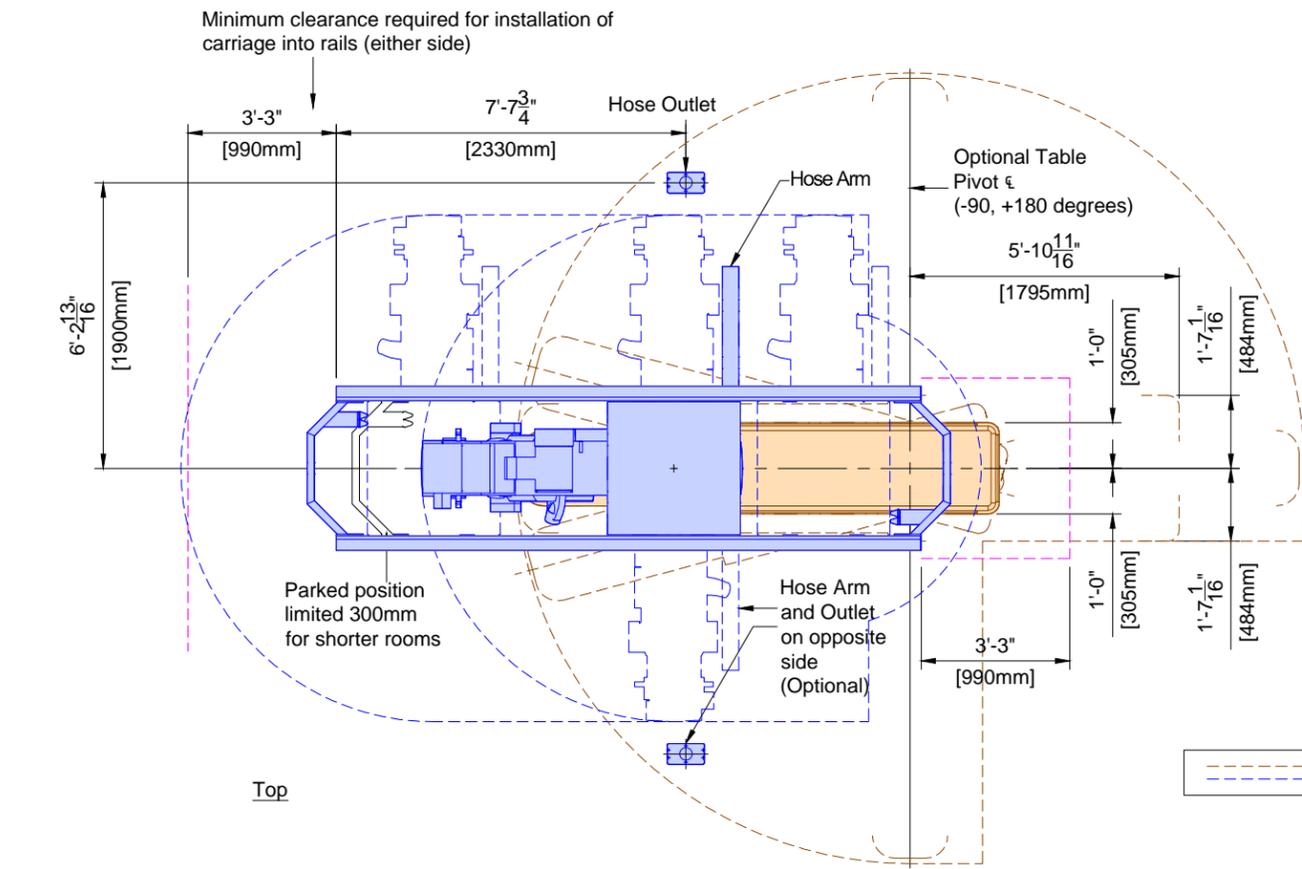
<b>Project</b>	<b>Allura FD20 Ceiling</b>
<b>Philips Contacts</b>	Project Manager: John Wright Contact Number: (214) 704-8619 Email: john.wright@philips.com Drawn By: Laura Phillips
<b>Project Details</b>	Drawing Number: <b>N-WES140162 C</b> Date Drawn: 11/14/2014 Quote: 1-ZMC9DA Rev. 2 Order: 6600224430.010000

**AD1**

(12.0)

**PHILIPS**

THE DRAWINGS AND RELATED INSTRUCTIONS PROVIDED BY PHILIPS ARE ACCEPTABLE FOR USE BY THE HOSPITAL'S ARCHITECT OR ENGINEER TO USE FOR THE DEVELOPMENT OF CONSTRUCTION DOCUMENTS. 8.20.14



(12.0)

SP	Clea Stand	
	Weight	Heat Dissipation
	2557 lbs	1706 btu/hr

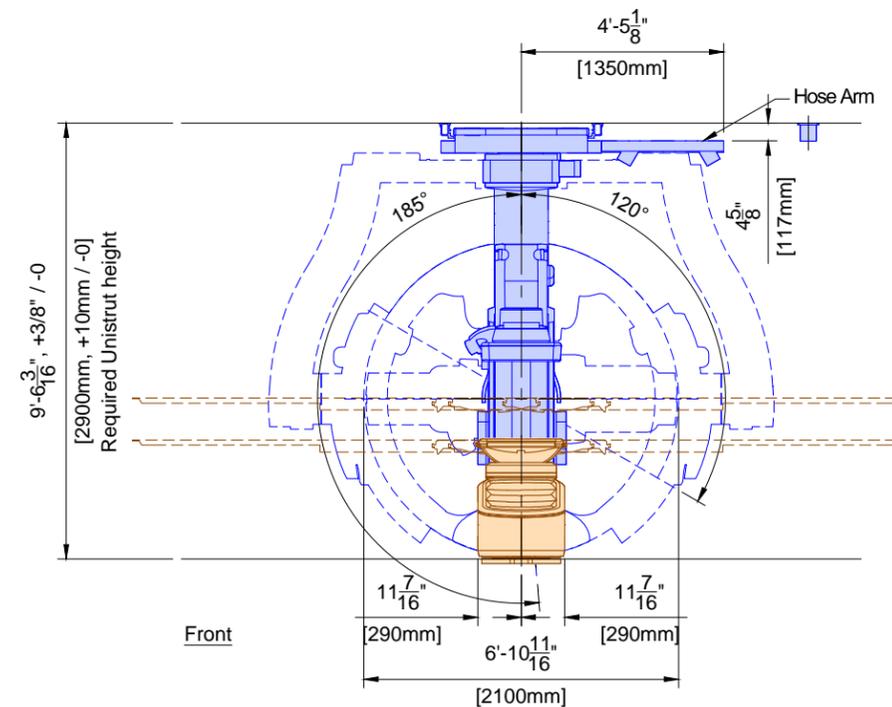
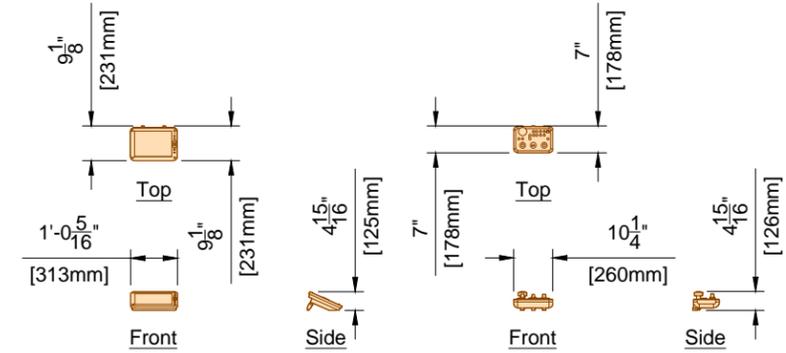


Table Pivot is optional. This allows the table to rotate -90, +180 degrees about center of table base.

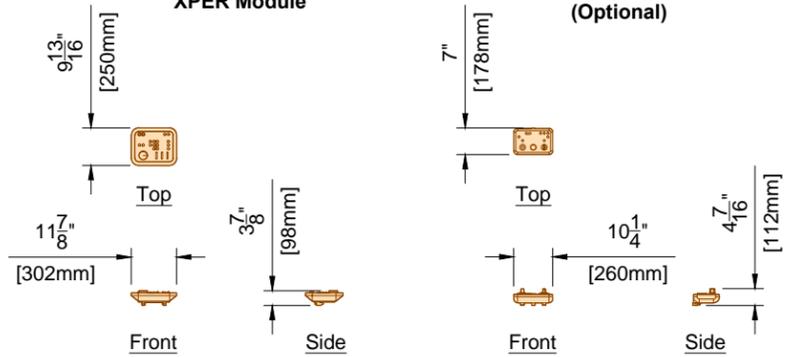
(12.0)

MSA	Angio Diagnost 7	
	Weight	Heat Dissipation
	1693 lbs	205 btu/hr



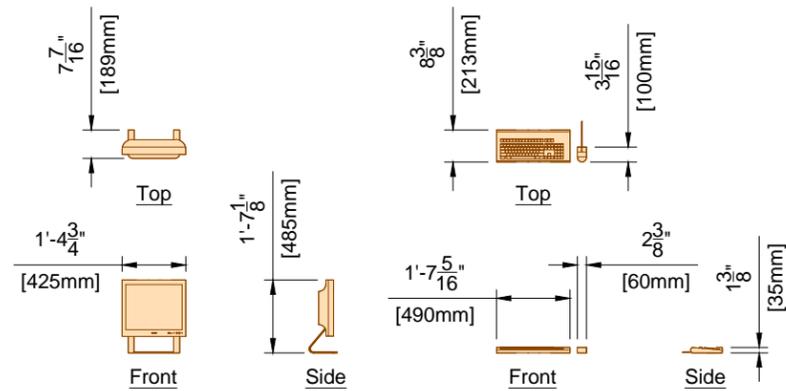
**XPER Module**

**Geometry T.S.O. (Optional)**



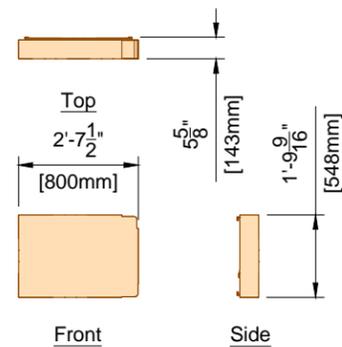
**Review Module**

**Imaging Cardio T.S.O. (Optional)**



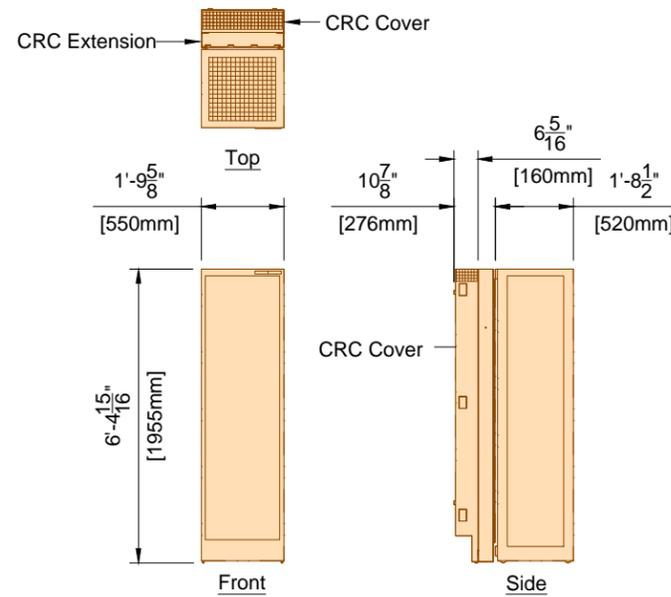
**LCD Monitor**

**Keyboard / Mouse**



**Connection Box**  
(See SD3 for mounting options)

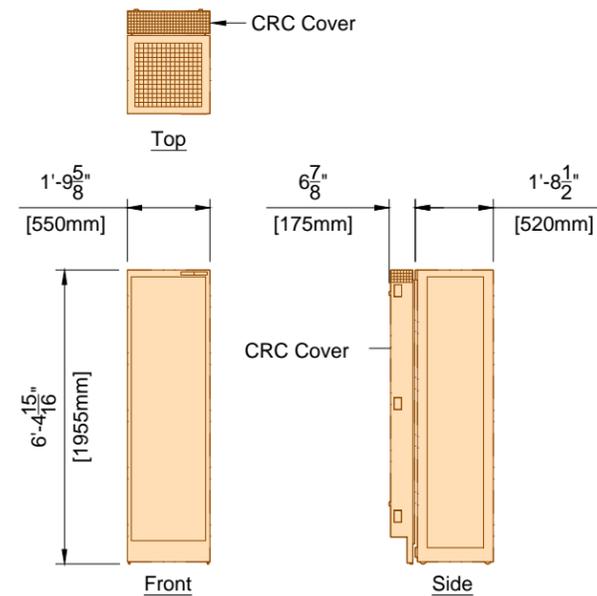
CY	View/Control (All Components) (12.0)	
	Weight	Heat Dissipation
	126 lbs	567 btu/hr



The CRC Cover must be attached to the the wall box.

Acoustic noise level: <= 55 dB(A) @ 1 meter in front of the rack and 1 meter high (1 meter = 39.37")

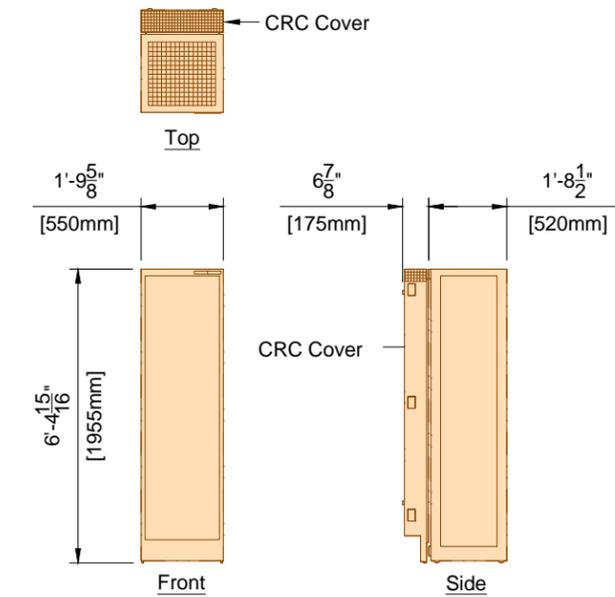
MA	Mains 40E Cabinet (14.0)	
	Weight	Heat Dissipation
	826 lbs	5464 btu/hr



The CRC Cover must be attached to the the wall box.

Acoustic noise level: <= 65 dB(A) @ 1 meter in front of the rack and 1 meter high (1 meter = 39.37")

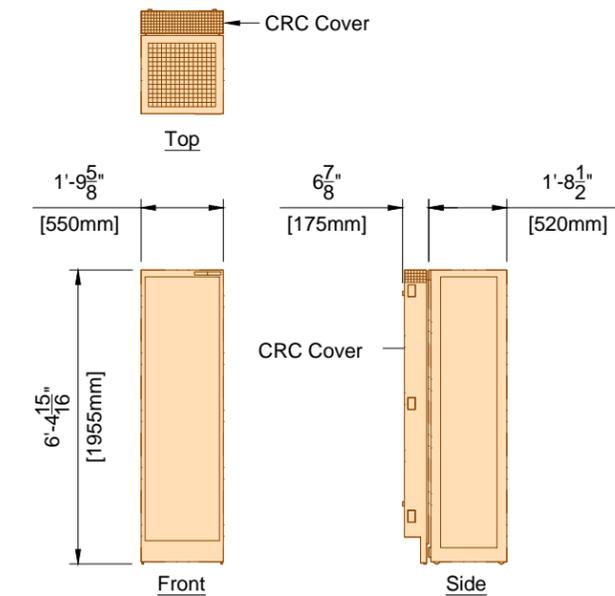
MP	Peripheral 40E Cabinet (14.0)	
	Weight	Heat Dissipation
	441 lbs	2049 btu/hr



The CRC Cover must be attached to the the wall box.

Acoustic noise level: <= 48 dB(A) @ 1 meter in front of the rack and 1 meter high (1 meter = 39.37")

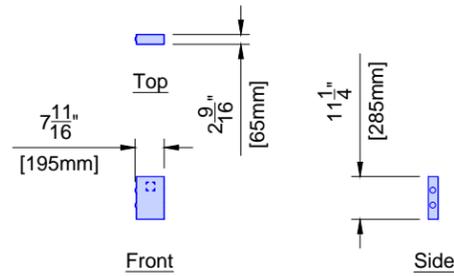
MB	Image 40E Cabinet (14.0)	
	Weight	Heat Dissipation
	441 lbs	1877 btu/hr



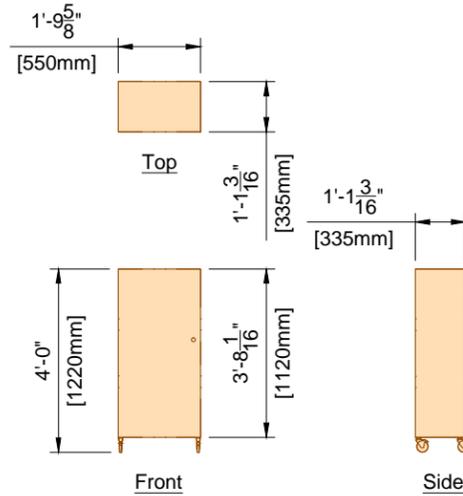
The CRC Cover must be attached to the the wall box.

Acoustic noise level: <= 55 dB(A) @ 1 meter in front of the rack and 1 meter high (1 meter = 39.37")

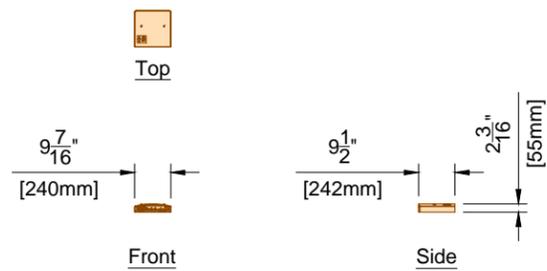
ME	Certeray iX Generator 40E Cabinet (14.0)	
	Weight	Heat Dissipation
	320 lbs	2971 btu/hr



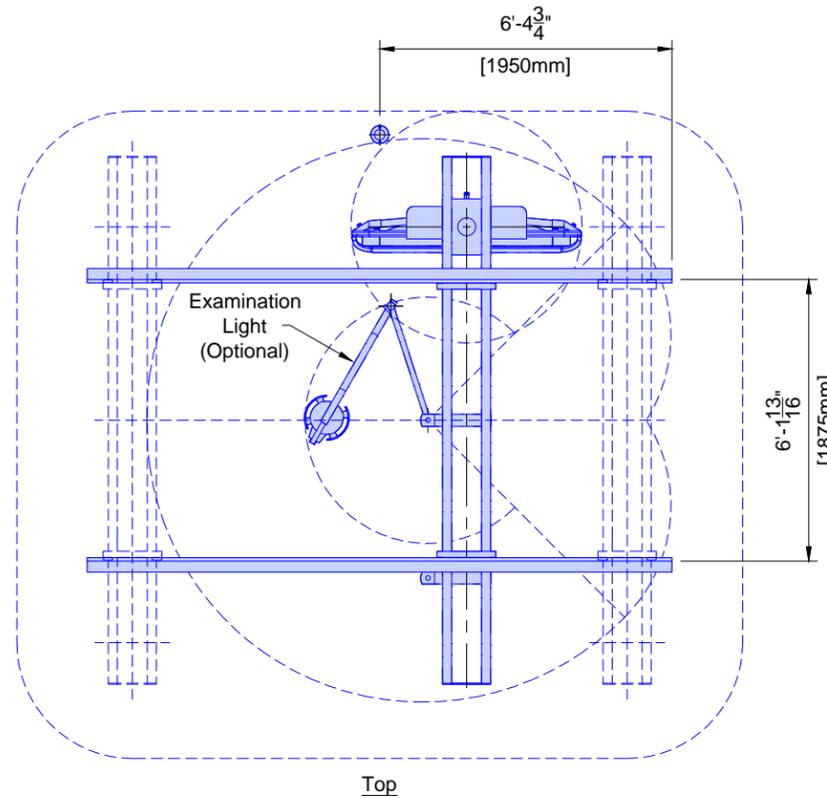
ATY	Auxiliary Box (12.0)	
	Weight	Heat Dissipation
	7 lbs	1.7 btu/hr



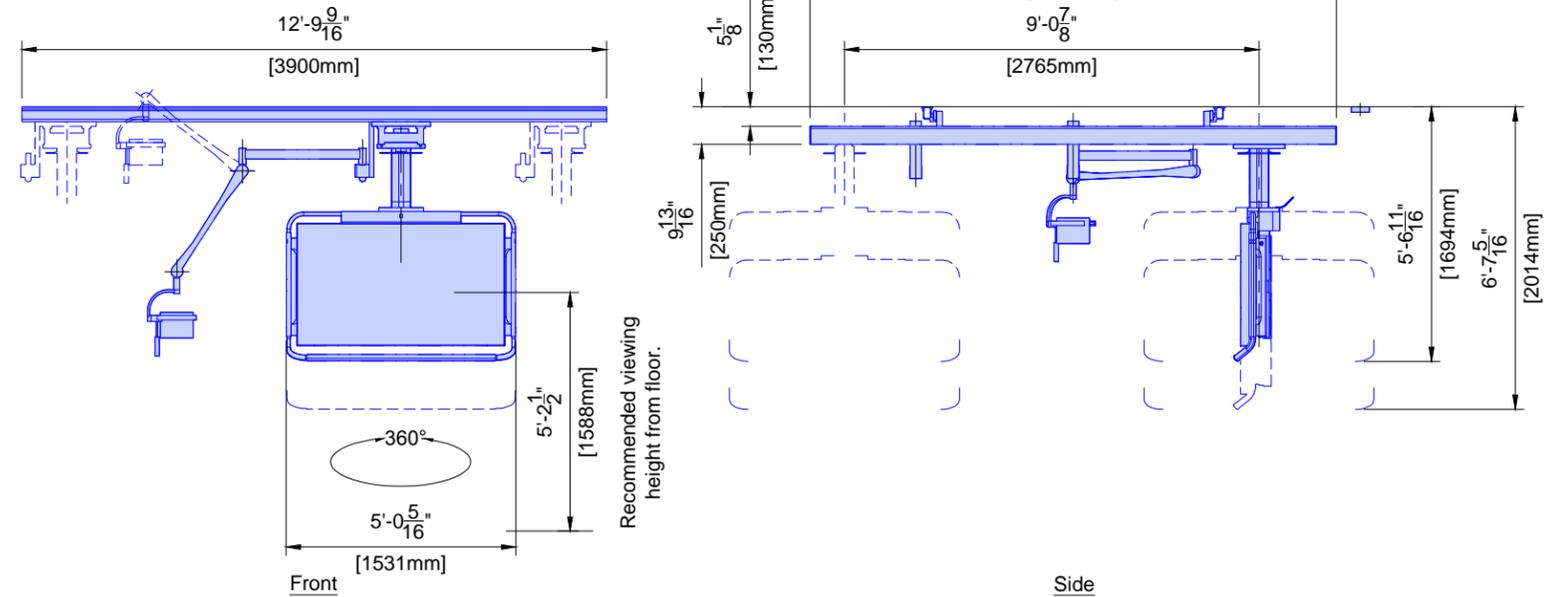
DB	Documentation Box (12.0)	
	Weight	Heat Dissipation
	176 lbs	0 btu/hr



VB1 ~ VB8	Video Connection Box (13.0)	
	Weight	Heat Dissipation
	11 lbs	34 btu/hr

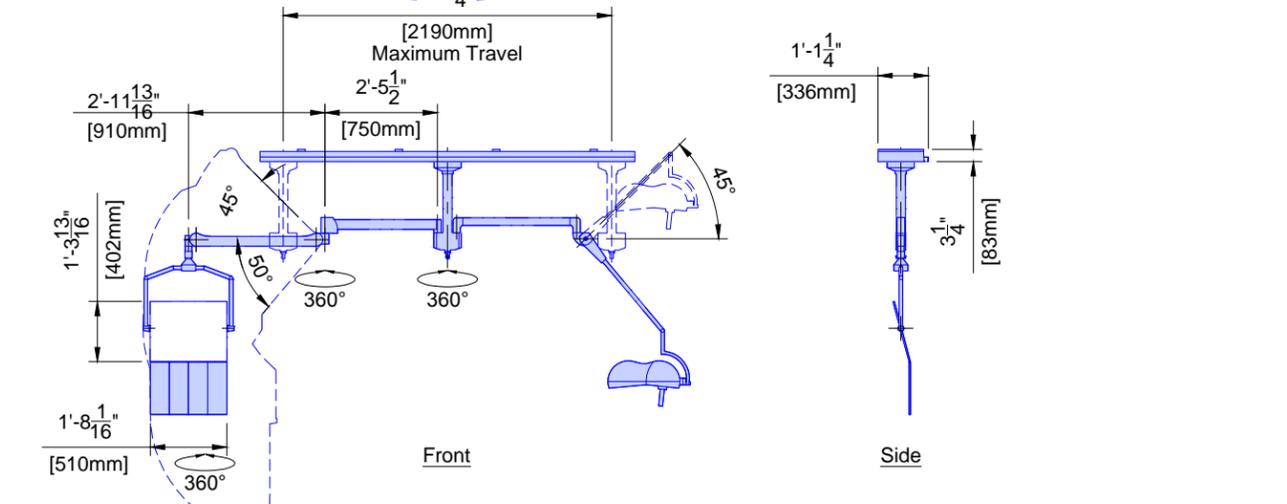
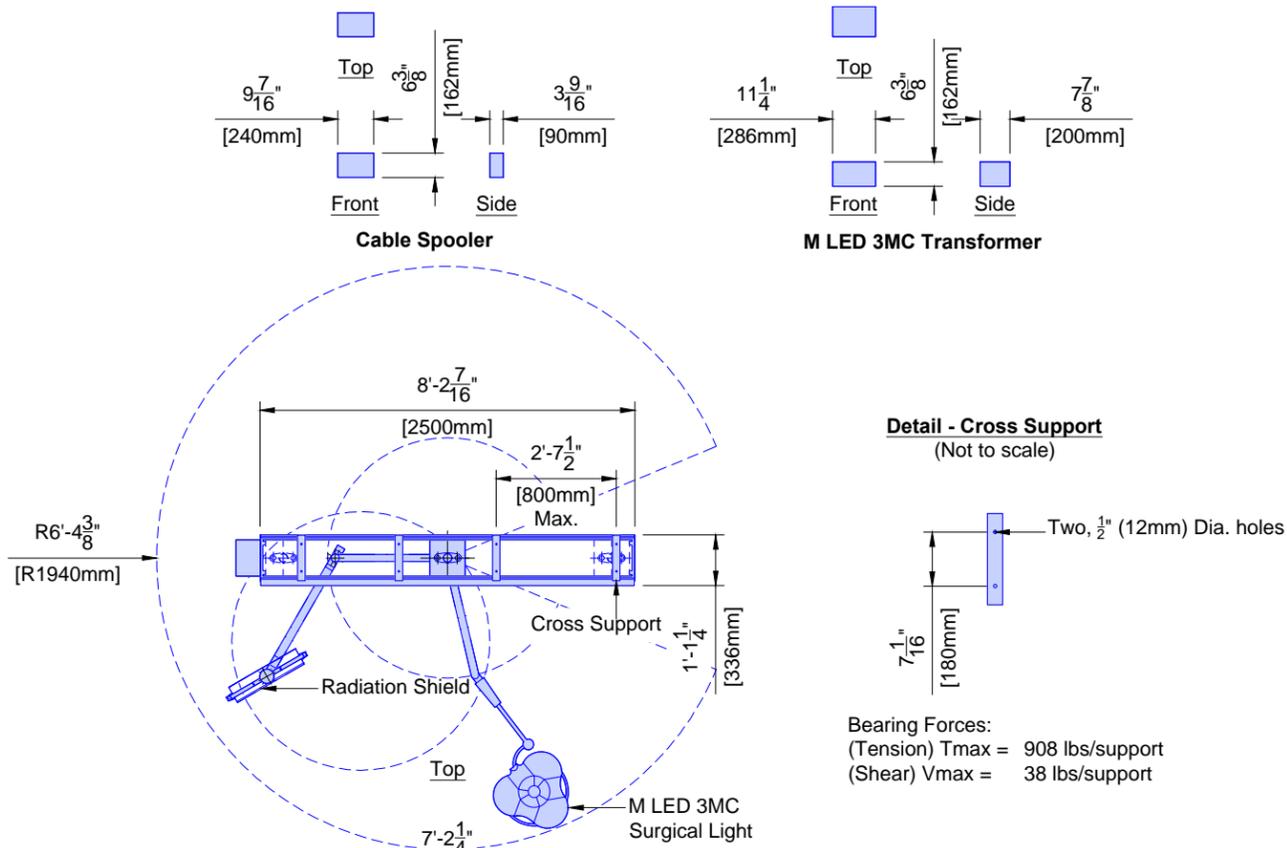


Bearing Forces:  
 (Tension) Tmax = 661 lbs/support  
 (Shear) Vmax = 150 lbs/support



For swing labs, 2700mm long ceiling rails are delivered. Maximum longitudinal column travel = 2100mm.  
 Weight shown is total weight including monitors, suspension, cabling, and options.

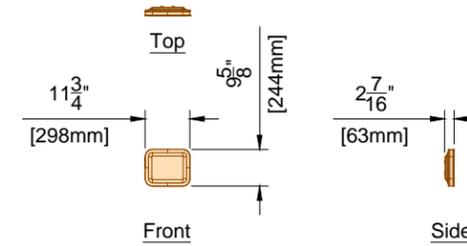
TV	58" LCD Monitor Suspension (12.0)	
	Weight	Heat Dissipation
	603 lbs	1020 btu/hr



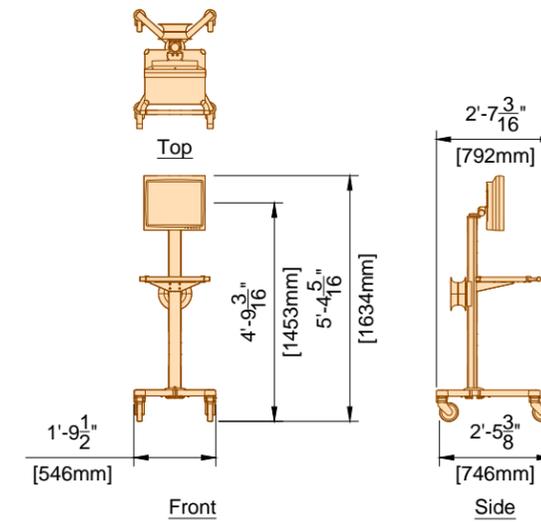
Bearing Forces:  
 (Tension) Tmax = 908 lbs/support  
 (Shear) Vmax = 38 lbs/support

MAV	Mavig Ceiling Track (12.0)	
	Weight	Heat Dissipation
	167 lbs	350 btu/hr

TR	M LED 3MC Transformer (12.0)	
	Weight	Heat Dissipation
	17 lbs	- btu/hr



DBS	Dose Aware - Base Station (12.0)	
	Weight	Heat Dissipation
	3.2 lbs	85 btu/hr



TV2	One LCD Monitor Carriage (12.0)	
	Weight	Heat Dissipation
	68 lbs	239 btu/hr

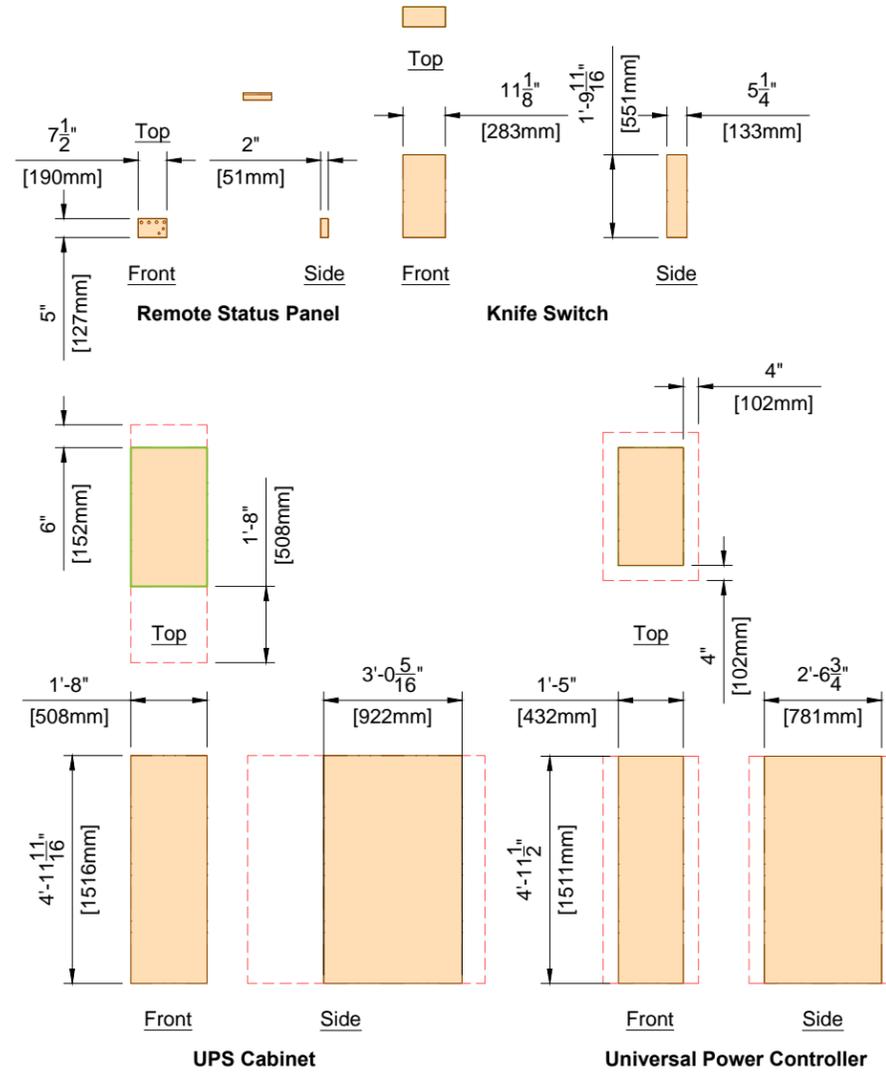
**Project**  
 Allura FD20 Ceiling  
 VA Oklahoma City  
 Oklahoma City, OK  
 -Room 1 1st Floor

**Philips Contacts**  
 Project Manager: John Wright  
 Contact Number: (214) 704-8619  
 Email: john.wright@philips.com  
 Drawn By: Laura Phillips

**Project Details**  
 Drawing Number: N-WES140162 C  
 Date Drawn: 11/14/2014  
 Quote: 1-ZMCS9DA Rev. 2  
 Order: 6600224430.010000

AD5





(14.0)

	25 kVA UPS with UPC	
	Weight	Heat Dissipation
UPS	998 lbs	11564 btu/hr
UPC	1020 lbs	
RSP	12 lbs	50 btu/hr
SWC	22 lbs	- btu/hr

<b>Project Details</b> Drawing Number <b>N-WES140162 C</b> Date Drawn: 11/14/2014 Quote: 1-ZMC9DA Rev. 2 Order: 6600224430.010000	<b>Philips Contacts</b> Project Manager: John Wright Contact Number: (214) 704-8619 Email: john.wright@philips.com Drawn By: Laura Phillips	<b>Project</b> <b>Allura FD20 Ceiling</b> <b>VA Oklahoma City</b> Oklahoma City, OK -Room 1 1st Floor
--	---	---

## Equipment Support Information

### 1. General

The customer shall be solely responsible, at its expense, for preparation of the site, including any required structural alterations. The site preparation shall be in accordance with this plan and specifications, the architectural/construction drawings and in compliance with all safety and building codes. The customer shall be solely responsible for obtaining all construction permits from jurisdictional authority.

### 2. Equipment Anchorage

Philips provides, with this plan and specifications, information relative to equipment size, weight, shape, anchoring hole locations and forces which may be exerted on anchoring fasteners. The customer shall be solely responsible, through the engineer of record for the building, to provide on the architectural/construction drawings, information regarding the approved method of equipment anchoring to floors, wall and/or ceiling of the building. Any anchorage test required by local authority shall be the customer's responsibility. Stud type anchor bolts should not be specified as they hinder equipment removal for service. Consult with Philips service prior to specifying anchor methods. Philips equipment must be electrically isolated from anchorage.

### 3. Floor Loading and Surface

Philips provides, with this plan and specifications, information relative to size, weight and shape of floor mounted equipment. The customer shall be solely responsible, through the engineer of record for the building, to provide on the architectural/construction drawings confirmation of the structural adequacy of the floor upon which the equipment will be placed. Any load test required by local authority, shall be the customer's responsibility.

The floor surface upon which Philips equipment is to be placed/anchored shall be flat and level to within plus or minus  $\frac{1}{16}$ " (2mm) over a length of 39" (1m).

### 4. Ceiling Support Apparatus

a. Philips provides, with this plan and specifications, information relative to size, weight and shape of ceiling supported equipment. The customer shall be solely responsible, through the engineer of record for the building, to provide on the architectural/construction drawings, information regarding the approved method of structural support apparatus, fasteners and anchorage to which Philips will attach equipment. Any anchorage and/or load test required by local authority shall be the customer's responsibility. Philips equipment must be electrically isolated from anchorage.

b. Contractor to clearly mark Philips equipment longitudinal centerline on bottom of each structural support.

c. The structural support apparatus surface to which Philips equipment is to be attached, shall have horizontal equipment attachment surfaces parallel, square and level to within plus or minus  $\frac{1}{16}$ " (2mm) per entire span.

d. Any drilling and/or tapping of holes required to attach Philips equipment to the structural support apparatus shall be the responsibility of the customer.

e. Fasteners/anchors (i.e., bolts, spring nuts, lock and flat washers) and strip closures shall be provided by the customer.

### 5. Lighting

Lighting fixtures shall be placed in such a position that they are not obscured by equipment or its movement, nor shall they interfere with Philips ceiling rails and equipment movement or otherwise adversely affect the equipment. Such lighting fixture locations shall be the sole responsibility of the customer.

### 6. Ceiling Obstructions

There shall be no obstructions that project below the finished ceiling in the area covered by ceiling suspended equipment travel.

### 7. Seismic Anchorage (For Seismic Zones Only)

All seismic anchorage hardware, including brackets, backing plates, bolts, etc., shall be supplied and installed by the customer/contractor unless otherwise specified within the support legend on this sheet. Installation of electronic cabinets to meet seismic anchorage requirements must be accomplished using flush mounted expansion type anchor/bolt systems to facilitate the removal of a cabinet for maintenance. Do not use threaded rod/adhesive anchor systems. Consult with Philips regarding any anchor system issues. Philips equipment must be electrically isolated from anchorage.

### 8. Floor Obstructions/ Floor Coverings

There shall be no obstructions on the floor (sliding door tracks, etc.) in front of the Philips technical cabinets. Floor must be clear to allow cabinets to be pulled away from the wall for service.

Contractor to verify with Philips the preferred floor covering installation method.

### 9. Safety Factors

In a worst case situation the dynamic bolt force of a floor or ceiling must be multiplied by factor 4. (static bolt force of the ceiling must be multiplied by factor 8). All safety factors are included in the bearing force values in sheet SD1.

### 10. Stiffness Requirements of Ceiling

Stiffness: 10,000,000 Newton/meter - 57.1 klb/in

Stiffness: 20,000,000 Newtonmeter/Rad - 177,014 (klb in)/Rad

The maximum deflection on the Philips rails must not exceed 0.04" (1mm) caused by the static load (weight) of the ceiling stand

### 11. Vibration

The maximal allowed external frequency that will not destroy the image quality of our equipment is:

- a. 0 Hz till 20 Hz (frequency area of our equipment) - Displacement amplitude is smaller than 0.005mm
- b. Greater than 20 Hz - Displacement amplitude is smaller than 0.01mm

(14.0)

<b>Project Details</b>	<b>Philips Contacts</b>	<b>Project</b>	
Drawing Number <b>N-WES140162 C</b> Date Drawn: 11/14/2014 Quote: 1-ZMC9DA Rev. 2 Order: 6600224430.010000	Project Manager: John Wright Contact Number: (214) 704-8619 Email: john.wright@philips.com Drawn By: Laura Phillips	Allura FD20 Ceiling  VA Oklahoma City Oklahoma City, OK -Room 1 1st Floor	
SN			

**See S1 for Floor & Wall Support Layout**

**Notes:**

1. Anchors for items that are installed/anchored by customer/contractor shall be provided by customer/contractor.
2. Anchors for items that are installed/anchored by Philips shall be provided by Philips. If customer's engineering documents specify anchors other than those listed in this document, the anchors shall be provided by customer/contractor and installed by Philips.
3. In all instances, the wall and/or floor support are the sole responsibility of the customer/contractor. The customer's architect/engineer of record shall specify wall and/or floor support sufficient for the bolt forces shown on the details.

**See S2 for Ceiling Support Layout**

**Floor & Wall Support Legend**

- A Furnished and installed/anchored by Philips (exceptions may exist, see Note 2)
- B Furnished and installed by customer/contractor and installed/anchored by customer/contractor
- C Installed/anchored by customer/contractor
- D Furnished by Philips and installed/anchored by contractor
- E Existing
- F Future
- G Optional

	Item Number	Description	Detail Sheet
B	F1	Support in wall for Control Room Connection Box (CY)	SD3
A	F1	Anchors in wall for Control Room Connection Box (CY)	SD3
D	F2	AD7 Adaptation Plate	SD1
C	F3	Anchors in wall for Dose Aware Base Station	SD2
C	F4	Anchors in wall for SWC	-

**Ceiling Support Legend**

- A Furnished and installed by Philips
- B Furnished by customer/contractor and installed by customer/contractor
- C Installed by customer/contractor
- D Furnished by Philips and installed by contractor
- E Existing
- F Future
- G Optional

	Item Number	Description	Detail Sheet
A	C1	2 - Philips Clea Rails	SD1 SD2
A	C2	2 - Philips Monitor Equipment Rails	SD2
B	C3	Unistrut (P1001 or equal) - Bottom of Unistrut 0" to 1/4" (6mm) Below Finished Ceiling	SD2
A	C4	Mavig Ceiling Track	AD5

**Project Details**

Drawing Number  
**N-WES140162 C**  
Date Drawn: 11/14/2014  
Quote: 1-ZMC9DA Rev. 2  
Order: 6600224430.010000



**Project**

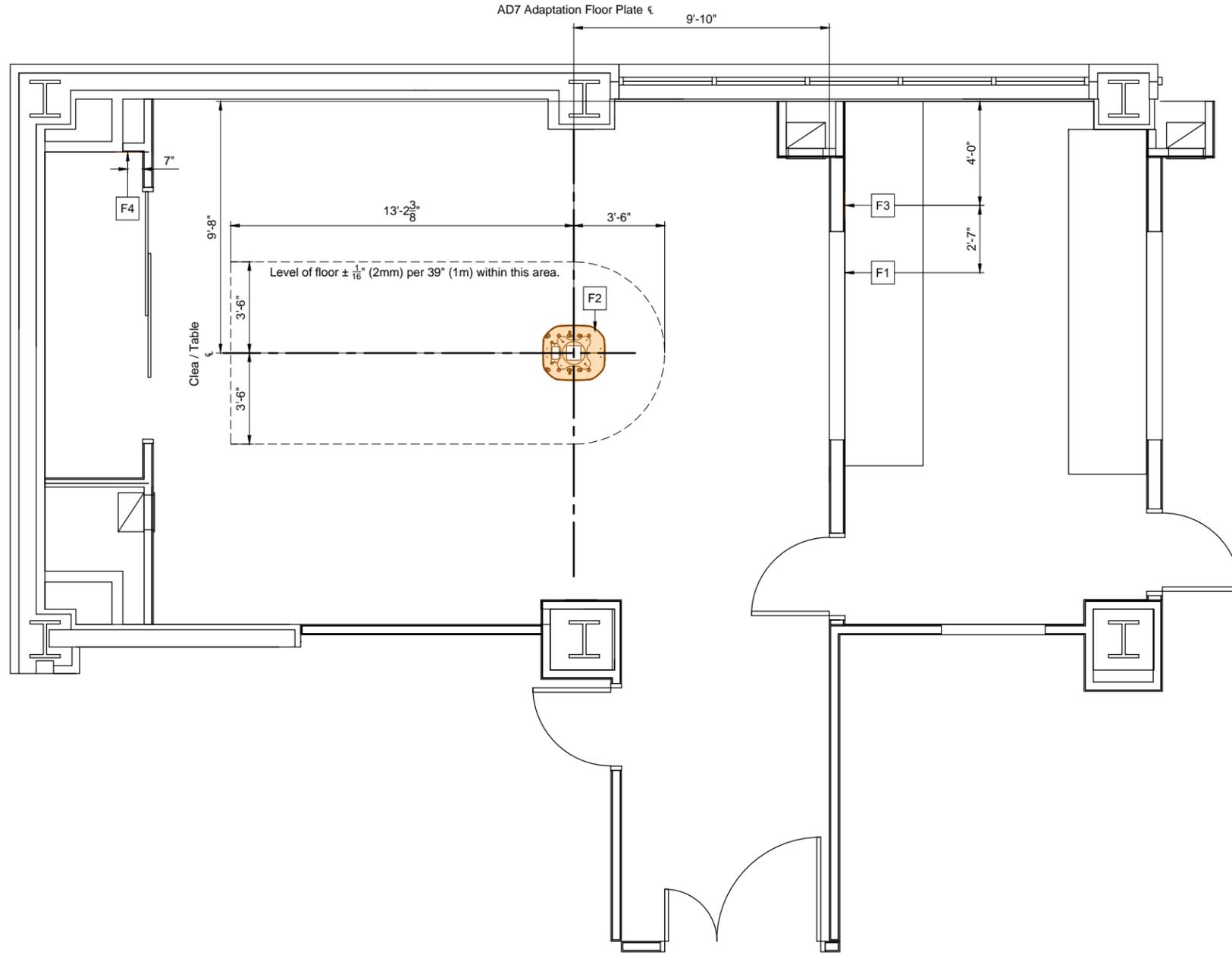
**Allura FD20 Ceiling**

**VA Oklahoma City  
Oklahoma City, OK  
-Room 1 1st Floor**

**Philips Contacts**

Project Manager: John Wright  
Contact Number: (214) 704-8619  
Email: john.wright@philips.com  
Drawn By: Laura Phillips





## Floor & Wall Support Layout

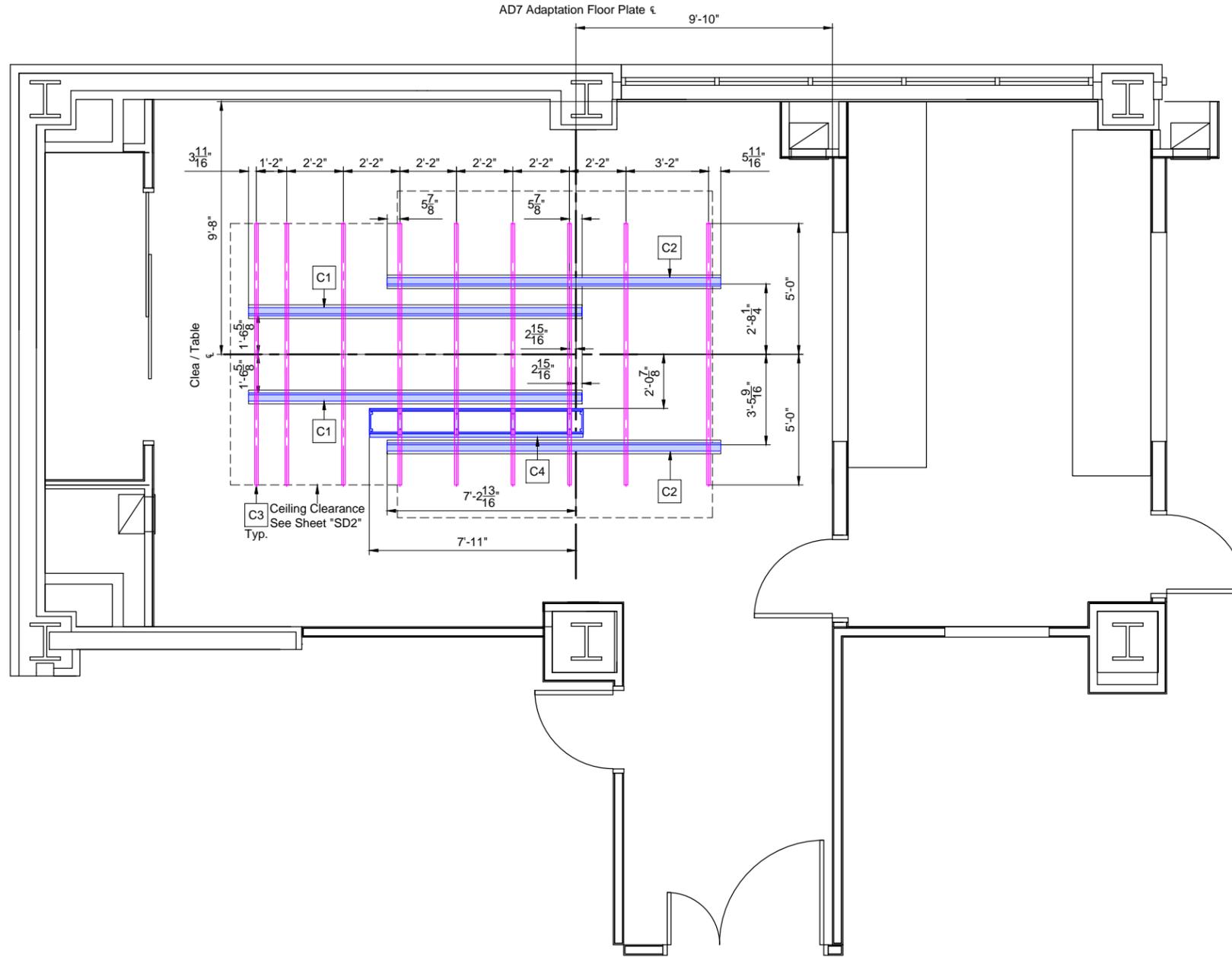
Required Unistrut Height:  $9' - 6 \frac{3}{16}''$ ,  $+\frac{3}{8}''$  / -0 (2900mm, +10mm / -0)  
 Unistrut height measured from finished floor to bottom of Unistrut.



Refer to Floor/Wall Support Legend - Sheet SL

<p><b>Project Details</b>                  Drawing Number  <b>N-WES140162 C</b>                  Date Drawn: 11/14/2014                  Quote: 1-ZMC9DA Rev. 2                  Order: 6600224430.010000</p>	<p><b>Philips Contacts</b>                  Project Manager: John Wright                  Contact Number: (214) 704-8619                  Email: john.wright@philips.com                  Drawn By: Laura Phillips</p>	<p><b>Project</b>  <b>Allura FD20 Ceiling</b>  <b>VA Oklahoma City</b>                  Oklahoma City, OK                  -Room 1 1st Floor</p>
---	--	--

S1



## Ceiling Support Layout

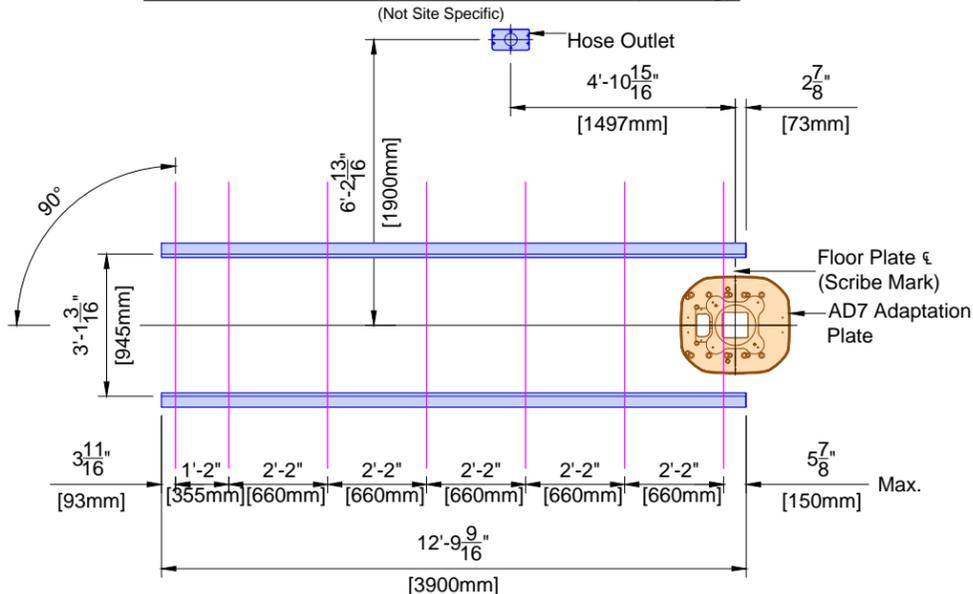
Required Unistrut Height: 9' - 6  $\frac{3}{16}$ " +  $\frac{3}{8}$ " / -0 (2900mm, +10mm / -0)  
 Unistrut height measured from finished floor to bottom of Unistrut.



Refer to Ceiling Support Legend - Sheet SL

<p><b>Project Details</b>                  Drawing Number  <b>N-WES140162 C</b>                  Date Drawn: 11/14/2014                  Quote: 1-ZMC9DA Rev. 2                  Order: 6600224430.010000</p>	<p><b>Philips Contacts</b>                  Project Manager: John Wright                  Contact Number: (214) 704-8619                  Email: john.wright@philips.com                  Drawn By: Laura Phillips</p>	<p><b>Project</b>  <b>Allura FD20 Ceiling</b>  <b>VA Oklahoma City</b>                  Oklahoma City, OK                  -Room 1 1st Floor</p>
---	--	--

**Detail - Mechanical Relation Allura FD20 (Ceiling)**



27" (685mm) maximum allowed distance between unistrut (seven unistrut required)  
 Floor plate supplied by Philips / installed by Contractor. Counterbored holes are sized for 1/2" (12mm) anchors per Seismic requirements.

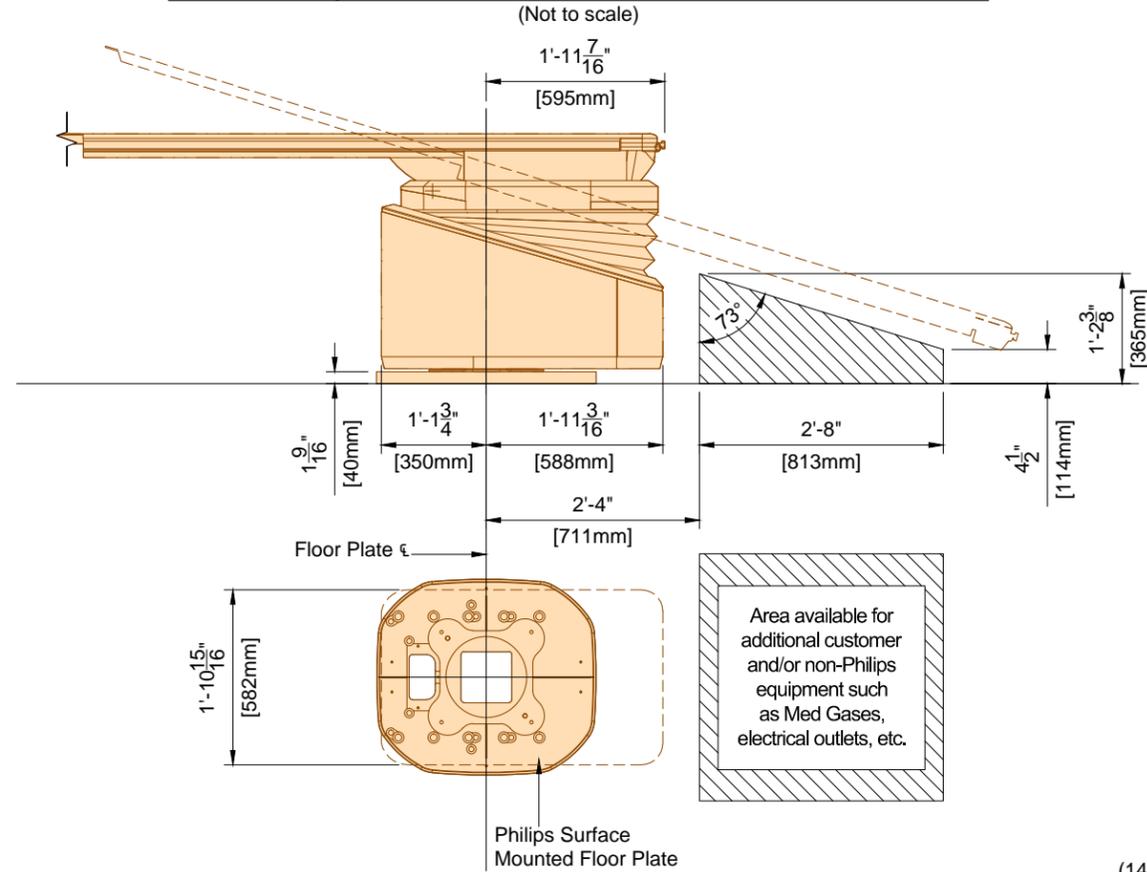
<b>Clea</b>	<b>AD7 Table</b>
Clea Bearing Forces:	Floor Plate to Floor Bolt Forces:
(Tension) T <sub>max</sub> = 2931 lbs/support	(Tension) T <sub>max</sub> = 1950 lbs/bolt
(Shear) V <sub>max</sub> = 1227 lbs/support	(Shear) V <sub>max</sub> = 776 lbs/bolt

Note: The bearing force shown for the Clea is the maximum instantaneous equipment bearing load that can result from abusive use of the system. This force can occur at two locations simultaneously on the same Unistrut (or equal) rail. If seismic forces must be considered, please refer to the seismic calculation sheets provided by Philips for the specific system components.

F2 C1

(12.0)

**Detail - AD7 SyncraTilt/Tilt Table, Fixed/Pivot Base - Clearance Area**

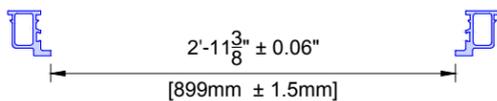


Area available for additional customer and/or non-Philips equipment such as Med Gases, electrical outlets, etc.

(14.0)

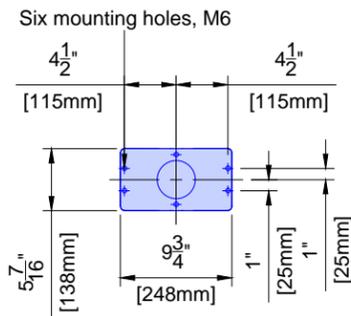
**Detail - Clip Rail Spacing**

(Not to scale)



**Detail - Cable Hose Outlet**

(Not to scale)



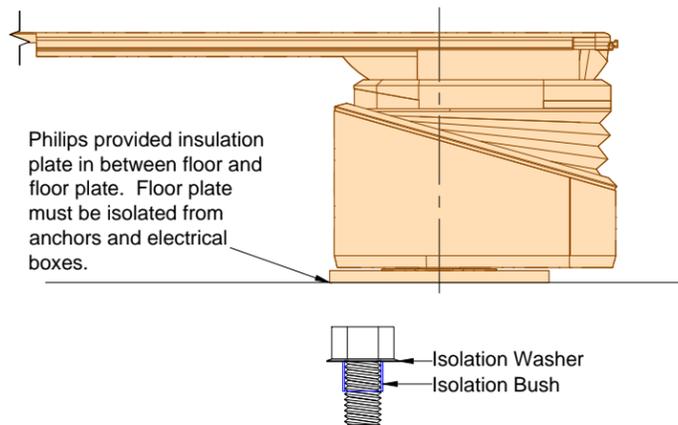
(12.0)

F2

**Detail - AD7 Adaptation Plate - Notes for Installation**

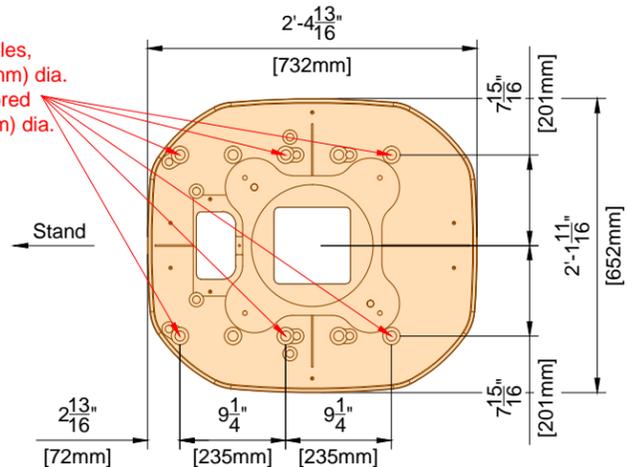
(Not to scale)

- 1.44" (40mm) thick floor plate, surface mounted with top of slab.
- Level within 1/16" (1.5mm) across surface of plate.



Note: The bolts need to be 5/8" (15.8mm) (M16) to allow the use of the insulation bush.

Use six holes, 0.91" (25mm) dia. Counterbored 1.5" (40mm) dia.



(13.0)

**Project**

Allura FD20 Ceiling

VA Oklahoma City  
 Oklahoma City, OK  
 -Room 1 1st Floor

**Philips Contacts**

Project Manager: John Wright

Contact Number: (214) 704-8619

Email: john.wright@philips.com

Drawn By: Laura Phillips

**Project Details**

Drawing Number

N-WES140162 C

Date Drawn: 11/14/2014

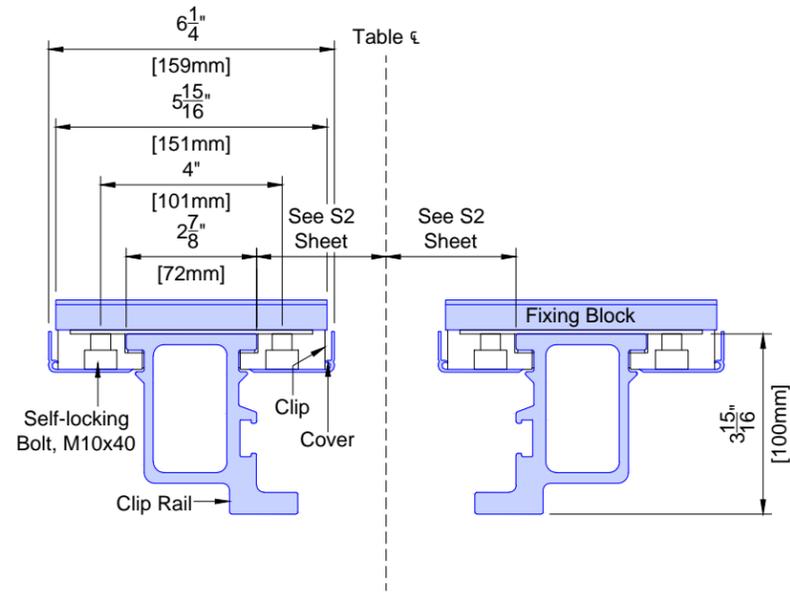
Quote: 1-ZMC9DA Rev. 2

Order: 6600224430.010000

SD1

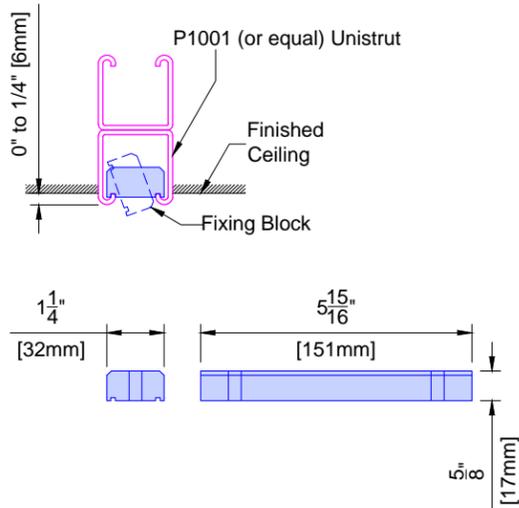
### Detail - Clip Rail Cross-Section

(Not to scale)



### Detail - Fixing Block for Philips Ceiling Rails (Clip Rails)

(Not to scale)



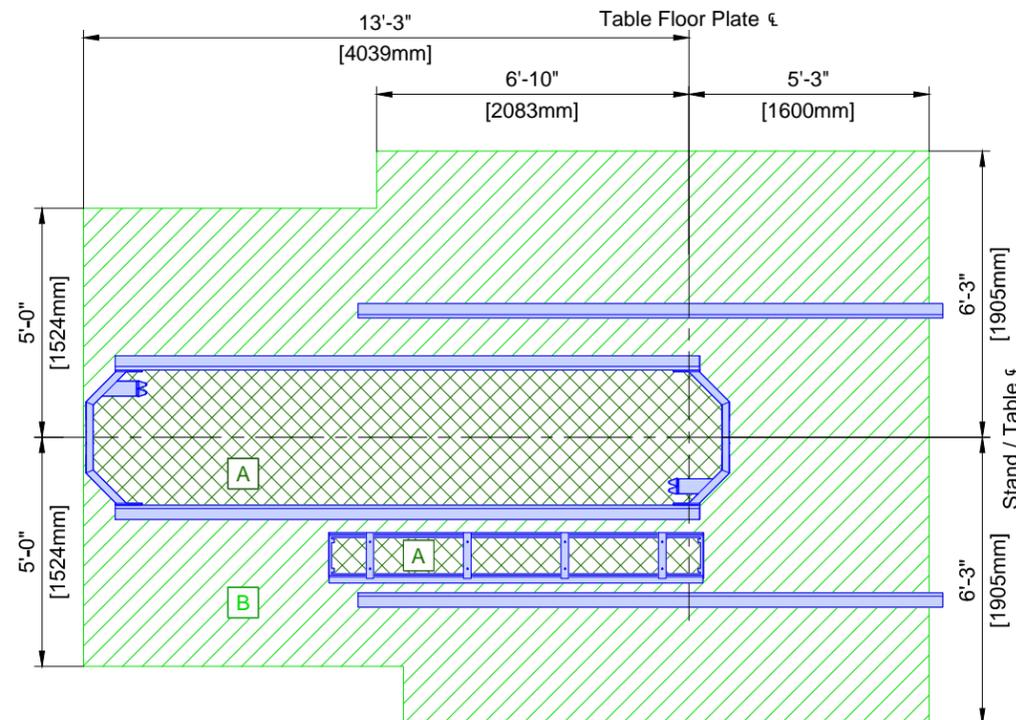
- Philips does not specify the overhead equipment support structure. Unistrut (or equal) may or may not be used. If Unistrut are used, it is up to Unistrut and the structural engineer for the project to determine which of its products are appropriate for each project.
- Finished ceiling must **NOT** be lower than the bottom of the Unistrut in order to prevent damage to the finished ceiling during the installation of clip rails. Finished ceiling height to be mounted 0" to 1/4" (6mm) above bottom of Unistrut.
- Nothing shall be attached to the Unistrut with any fastener that protrudes into the Unistrut which would interfere with positioning of the fixing block.
- Fixing blocks for Philips ceiling rails (Clip rails) are designed to be installed in P1001 Unistrut.
- The inside of the Unistrut must be clear of obstructions (including paint).
- Unistrut elements must be rigid and comply with the ceiling structure requirements. See SN sheet, line #4 "Ceiling Support Apparatus".
- Welding Unistrut may warp Unistrut and deteriorate the structural integrity of the Unistrut. Consult the Structural Engineer of Record prior to welding any Unistrut.

C1 C2 C3

(14.0)

### Detail - Restricted Ceiling Area for Objects that Project Below Finished Ceiling

(Not site specific)

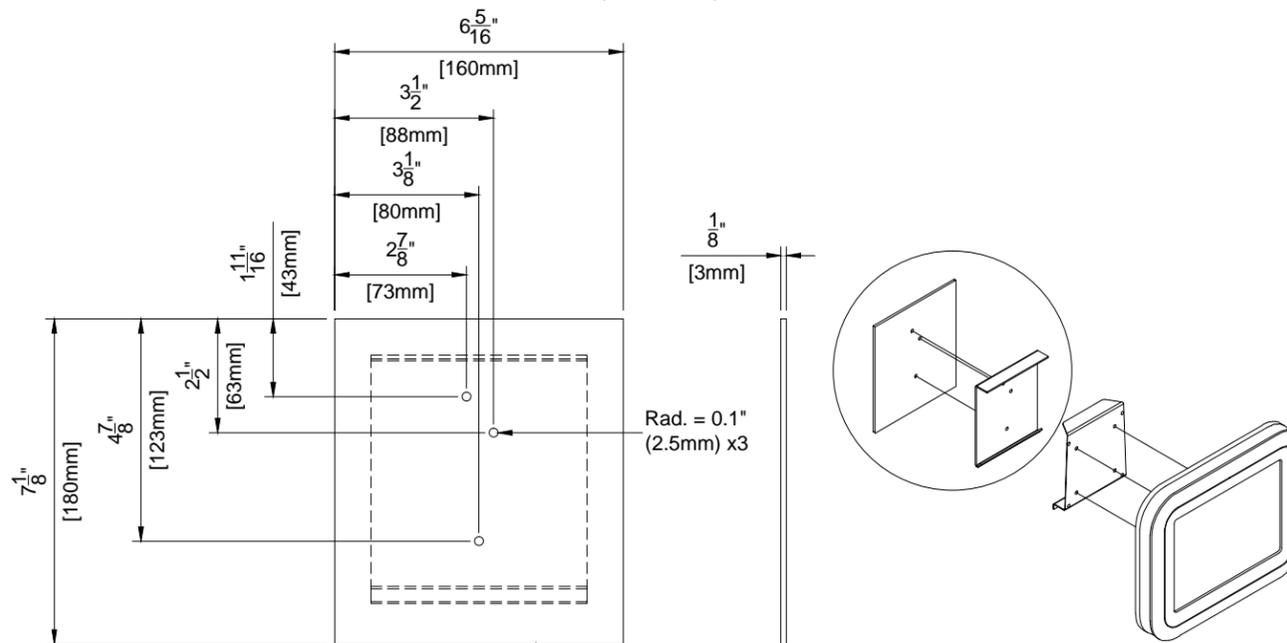


- A** No objects that project below finished ceiling are allowed in this area (lights, smoke detectors, sprinkler heads, etc).
- B** No objects that project more than 4.5" (115mm) below finished ceiling are allowed in this area (lights, smoke detectors, sprinkler heads, soffit, etc).

(14.0)

### Detail - Dose Aware Base Station Template

(Not to scale)



To be made locally. Use template for drilling holes.

F3

(12.0)

**Project**  
Allura FD20 Ceiling  
VA Oklahoma City  
Oklahoma City, OK  
-Room 1 1st Floor

**Philips Contacts**  
Project Manager: John Wright  
Contact Number: (214) 704-8619  
Email: john.wright@philips.com  
Drawn By: Laura Phillips

**Project Details**  
Drawing Number  
N-WES140162 C  
Date Drawn: 11/14/2014  
Quote: 1-ZMC9DA Rev. 2  
Order: 6600224430.010000

SD2

**Project**  
**Allura FD20 Ceiling**  
**VA Oklahoma City**  
**Oklahoma City, OK**  
**-Room 1 1st Floor**

**Philips Contacts**  
 Project Manager: John Wright  
 Contact Number: (214) 704-8619  
 Email: john.wright@philips.com  
 Drawn By: Laura Phillips

**Project Details**  
 Drawing Number  
**N-WES140162 C**  
 Date Drawn: 11/14/2014  
 Quote: 1-ZMC9DA Rev. 2  
 Order: 6600224430.010000

**SD3**

### Pre-Evaluated and -Approved Anchor Reference List for Philips Installers

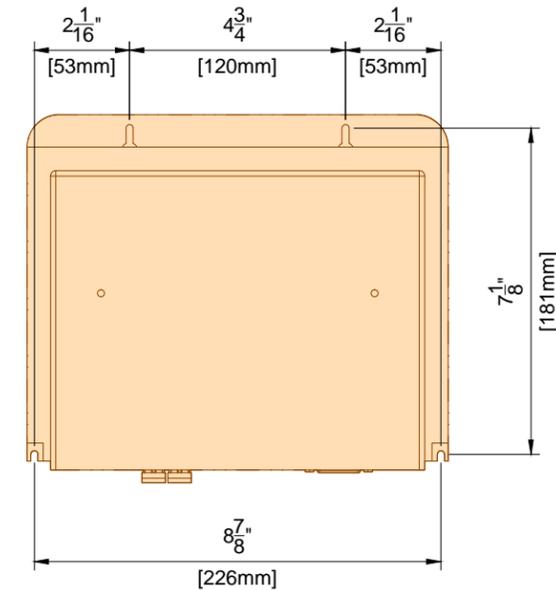
Anchors for items that are installed/anchored by customer/contractor shall be provided by customer/contractor. Anchors for items that are installed/anchored by Philips shall be provided by Philips. If customer's engineering documents specify anchors other than those listed below, the anchors shall be provided by customer/contractor and installed by Philips. In all instances, the wall and/or floor support are the sole responsibility of the customer/contractor. The customer's architect/engineer of record shall specify wall and/or floor support sufficient for the bolt forces shown on the details.

Equipment	Option	Anchor Style (provided by Philips)	Anchor Size (provided by Philips)	Qty.	Support Size & Material (provided & installed by customer/contractor)
Mavig Ceiling Track	A	Bolts, flat washer, lock washer, spring nuts	A307 Grade or ASME Grade 5 Bolts: $\frac{3}{8}$ " (10mm) x 2" (50mm) L Spring Nuts: $\frac{3}{8}$ " (10mm)	8	Unistrut
Control Room Connection Box (CY)	A	Round Phillips Head Self Drilling Screws	#10-16 x $1\frac{1}{2}$ " (38mm) L	3	Drywall with minimum 20 gauge Steel backing
	B	SPAX Multipurpose flat head screw	#10 x $1\frac{1}{2}$ " (38mm) L	3	Drywall with minimum 20 gauge Steel backing
	C	Toggler Snaptoggle and (round head screws)	#BA and (#10-24 x $2\frac{1}{2}$ " (63.5mm) L)	3	Minimum $\frac{5}{8}$ " (16mm) Drywall

(12.0)

### Detail - Video Connection Box - Hole Pattern for Mounting

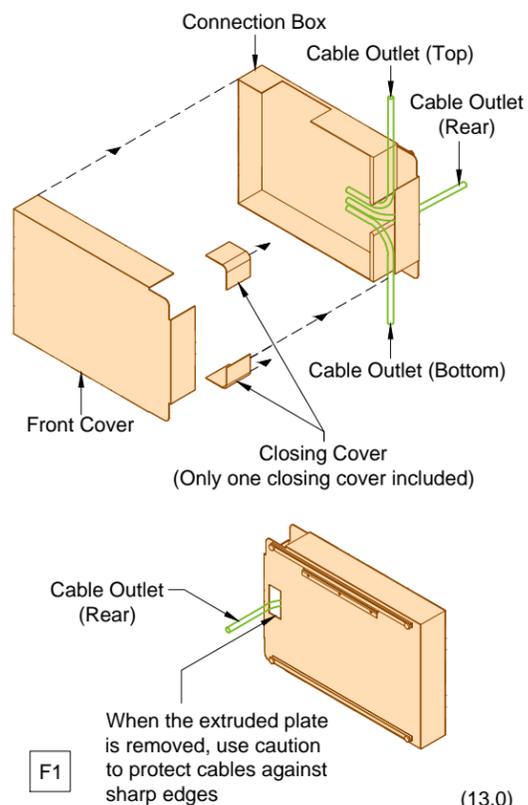
(Not to scale)



(13.0)

### Detail - CY Connection Box - Cable Outlets

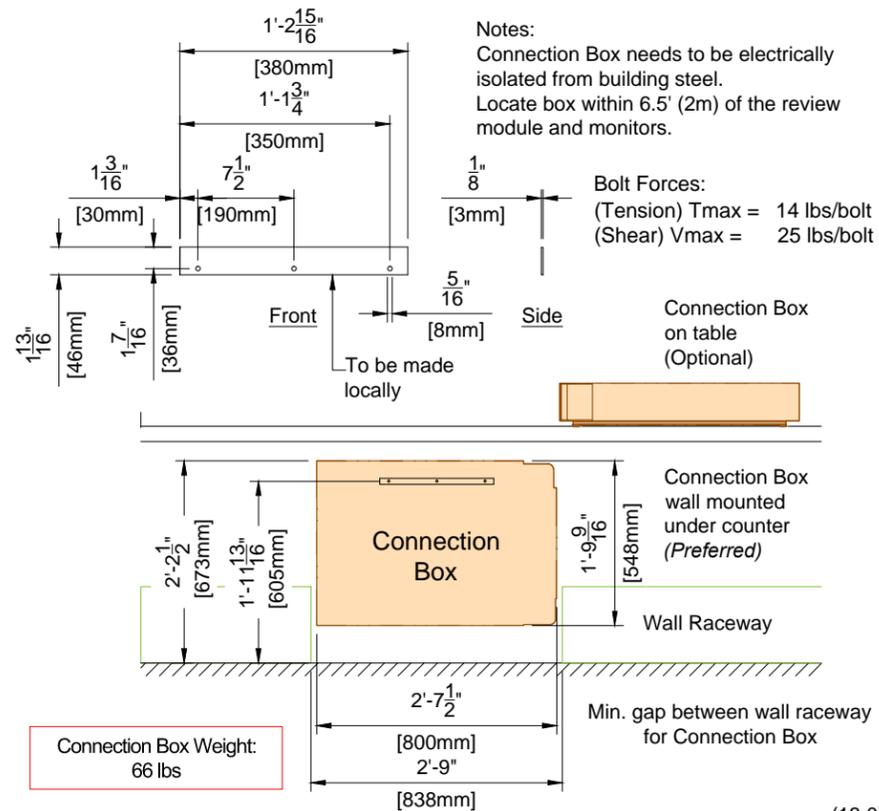
(Not to scale)



(13.0)

### Detail - CY Connection Box - Wall Mount Template

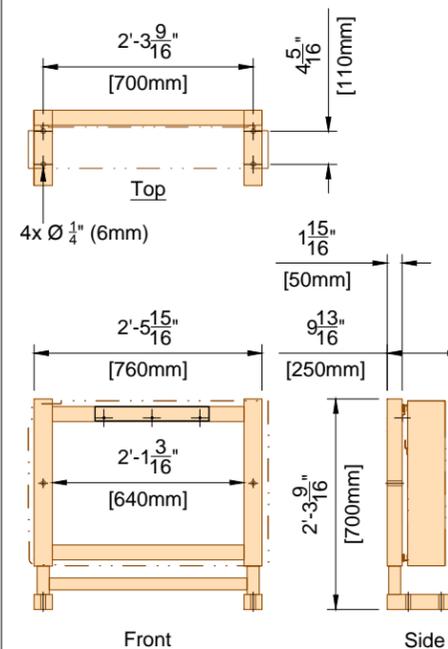
(Not to scale)



(13.0)

### Detail - CY Connection Box Support Frame Option

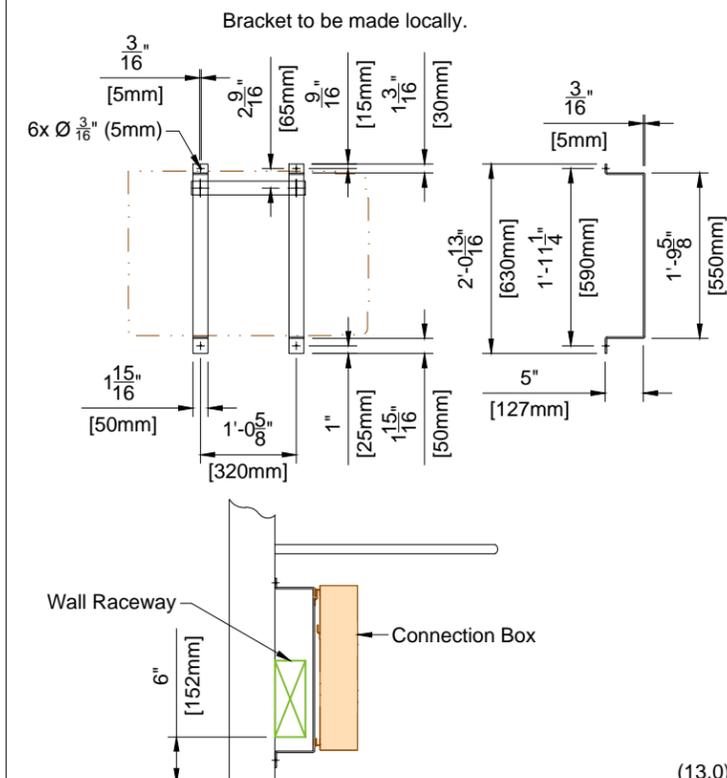
(Not to scale)



(13.0)

### Detail - CY Connection Box - Bracket Mount Option

(Not to scale)



(13.0)

### Emergency Power

Philips does not require equipment to be on emergency power. If the customer deems it necessary for the equipment to be supplied with emergency power, the following specifications must be applied:

The Mains 40E cabinet feeding an Allura Xper system will have an absolute peak surge current of <380A.

The transfer switch must be double actuator type with a minimum time delay of 400 milliseconds in both directions (utility to emergency - emergency to utility). This time is required to allow filters to dissipate their stored energy before a different mains voltage is applied. Russelectric type RMTD, Asco Series 7000 delayed transition transfer switch or equivalent is recommended.

To reduce the emergency power generator load demand, Philips equipment can be put into a lower power mode of operation by the connection of a potential free closure from the transfer switch. This potential free, normally open contact, has to be rated for 24VDC/100mA. For Philips cardio/vascular Allura equipment, the two wires from this contact have to be routed to the equipment area and connected to the System Coordinator cabinet (MA).

(14.0)

### Electrical Requirement Notes for Systems with Mains 40E Cabinet

Electrical power distribution at the facility shall comply with:

Utilization voltages per ANSI C84.1 - 1982 range A.

Voltage to be supplied is 3 phase, delta.

Phase conductors to be sized for instantaneous voltage drop per NEC 517 - 73 and Philips recommendations.

Metal conduit shall not be used as the equipment ground conductor.

The Philips system uses an isolated ground scheme grounding only the Allura system per clause 250.96B of the NEC. The raceway from the X-ray breaker (CB) to the Mains 40E Cabinet shall be supplemented by an internal insulated equipment grounding conductor installed in accordance with clause 250.146(D) of the NEC.

ANSI / NFPA 70 - National Electrical Code  
Article 250 - Grounding  
Article 517 - Healthcare Facilities  
ANSI / NFPA 99 - Healthcare Facilities  
NEMA standard XR9 - Power Supply Guideline for X-ray Machines

### Power Quality Guidelines

- Power supplied to medical imaging equipment must be separate from power feeds to air conditioning, elevators, outdoor lighting, and other frequently switched or motorized loads. Such loads can cause waveform distortion and voltage fluctuations that can hinder high quality imaging.
- Equipment that utilizes the facility power system to transmit control signals (especially clock systems) may interfere with medical imaging equipment, thus requiring special filtering.
- The following devices provide a high impedance, nonlinear voltage source, which may affect image quality:

Static UPS systems, Series filters, Power conditioners, and Voltage regulators.

Do not install such devices at the mains supply to medical imaging equipment without consulting Philips installation or service personnel.

4. Line impedance is the combined resistance and inductance of the electrical system and includes the impedance of the power source, the facility distribution system, and all phase conductors between the source and the imaging equipment. Philips publishes recommended conductor sizes based on equipment power requirements, acceptable voltage drops, and assumptions about the facility source impedance. The minimum conductor size is based on the total line impedance and NEC requirements. Unless impedance calculations are performed by an electrical engineer, the recommended values must be used.

(14.0)

### General Electrical Information

#### 1. General

The customer shall be solely responsible, at its expense, for preparation of the site, including any required electrical alterations. The site preparation shall be in accordance with this plan and specifications, the architectural/construction drawings and in compliance with all safety and electrical codes, the customer shall be solely responsible for obtaining all electrical permits from jurisdictional authority.

#### 2. Materials and Labor

The customer shall be solely responsible, at its expense, to provide and install all electrical ducts, boxes, conduit, cables, wires, fittings, bushing, etc., As separately specified herein.

#### 3. Electrical Ducts and Boxes

Electrical ducts and boxes shall be accessible and have removable covers. Floor ducts and boxes shall have watertight covers. Ducts shall be divided into as many as four separate channels by metal dividers, separately specified herein, to separate wiring and/or cables into groups as follows: Group A: incoming power wiring with associated protective earth wiring (PE). Group B: Output power wiring with associated protective earth wiring (PE). Group C: signal and/or data wiring and/or cables. Group D: X-Ray high-voltage cables, the use of 90 deg. ells is not acceptable. On ceiling duct and wall duct use 45 deg. bends at all corners. All intersecting points in duct to have cross over tunnels supplied and installed by contractor to maintain separation of cables.

#### 4. Conduit

Conduit point - to - point runs shall be as direct as possible. Empty conduit runs used for cables may require pull boxes located along the run. Consult with Philips. A pull wire or cord shall be installed in each conduit run. All conduits which enter duct prior to their termination point must maintain separation from other cables via use of dividers, cross over tunnels, or conduit supplied and installed by contractor from entrance into duct to exit from duct. Do not use flex conduit unless approved by Philips Service.

#### 5. Conductors

All conductors, separately specified, shall be 75°C stranded copper, rung out and marked.

#### 6. Disconnecting Means

A disconnecting means shall be provided as separately specified.

#### 7. Warning Lights and Door Switches

"X-ray on" warning lights and x-ray termination door switches should be provided at all entrances to x-ray rooms as required by code.

#### 8. Dimmer Switches

X-ray room lights should be provided with dimmer switches.

(12.0)

### Electrical Notes

- The contractor will supply & install all breakers, shunt trip and incoming power to the breakers. The exact location of the breakers and shunt trips will be determined by the architect or contractor.
- The contractor shall supply & install all pull boxes, raceways, conduit runs, stainless steel covers, etc. Conduit/raceways must be free from burrs and sharp edges over its entire length. A Greenlee pull string/measuring tape (part no. 435, or equivalent) shall be provided with conduit runs.
- All pre - terminated, cut to length cables, will be supplied and installed by Philips. All cables to the breakers, will be supplied and installed by the contractor, subject to local arrangements.
- Provide and install 50mm diameter chase nipples between adjacent wall boxes.
- Electrical raceway shall be installed with removable covers. The raceway should be accessible for the entire length. In case of non - accessible floors, walls and ceilings, an adequate number of access hatches should be supplied to enable installation of cabling. Approved conduits may be substituted. All raceways will be designed in a manner that will not allow cables to fall out of the raceway when the covers are removed. In most cases, this will require above - ceiling raceway to be installed with the covers removable from the top. Raceway system as illustrated on this drawing are based upon length of furnished cables. Any changes in routing of raceway system could exceed maximum allowable length of furnished cables. Conduit or raceway above - ceiling must be kept as near to finished ceiling as possible.
- Conduit sizes shall be verified by the architect, electrical engineer or contractor, in accordance with local or National Electrical Codes, whichever govern.
- Convenience outlets are not illustrated. Their number and location are to be specified by the customer/architect.
- Electrical contractor shall install ground bond wires at conduit openings within wall boxes as required by national and local electrical codes. Ground bond wires and lugs shall be installed in such a way to prevent the inadvertent contact with the installed Philips equipment to maintain Philips isolated ground scheme and maintain patient safety.
- Install an insulated stranded ground wire per feeder/conductor size from the Main Disconnect (CB) to the ERB and from the ERB to the Mains 40E Cabinet (per NEC clause 250.146(D)).
- Philips equipment must be electrically isolated from conduits, raceways, ducts, seismic anchoring, floor anchoring, etc.

(14.1)

<b>Project</b>	<b>Allura FD20 Ceiling</b>
	<b>VA Oklahoma City Oklahoma City, OK -Room 1 1st Floor</b>
<b>Philips Contacts</b>	<b>Project Manager:</b> John Wright
	<b>Contact Number:</b> (214) 704-8619 <b>Email:</b> john.wright@philips.com <b>Drawn By:</b> Laura Phillips
<b>Project Details</b>	<b>Drawing Number</b> <b>N-WES140162 C</b>
	<b>Date Drawn:</b> 11/14/2014 <b>Quote:</b> 1-ZMC9DA Rev. 2 <b>Order:</b> 6600224430.010000

EN



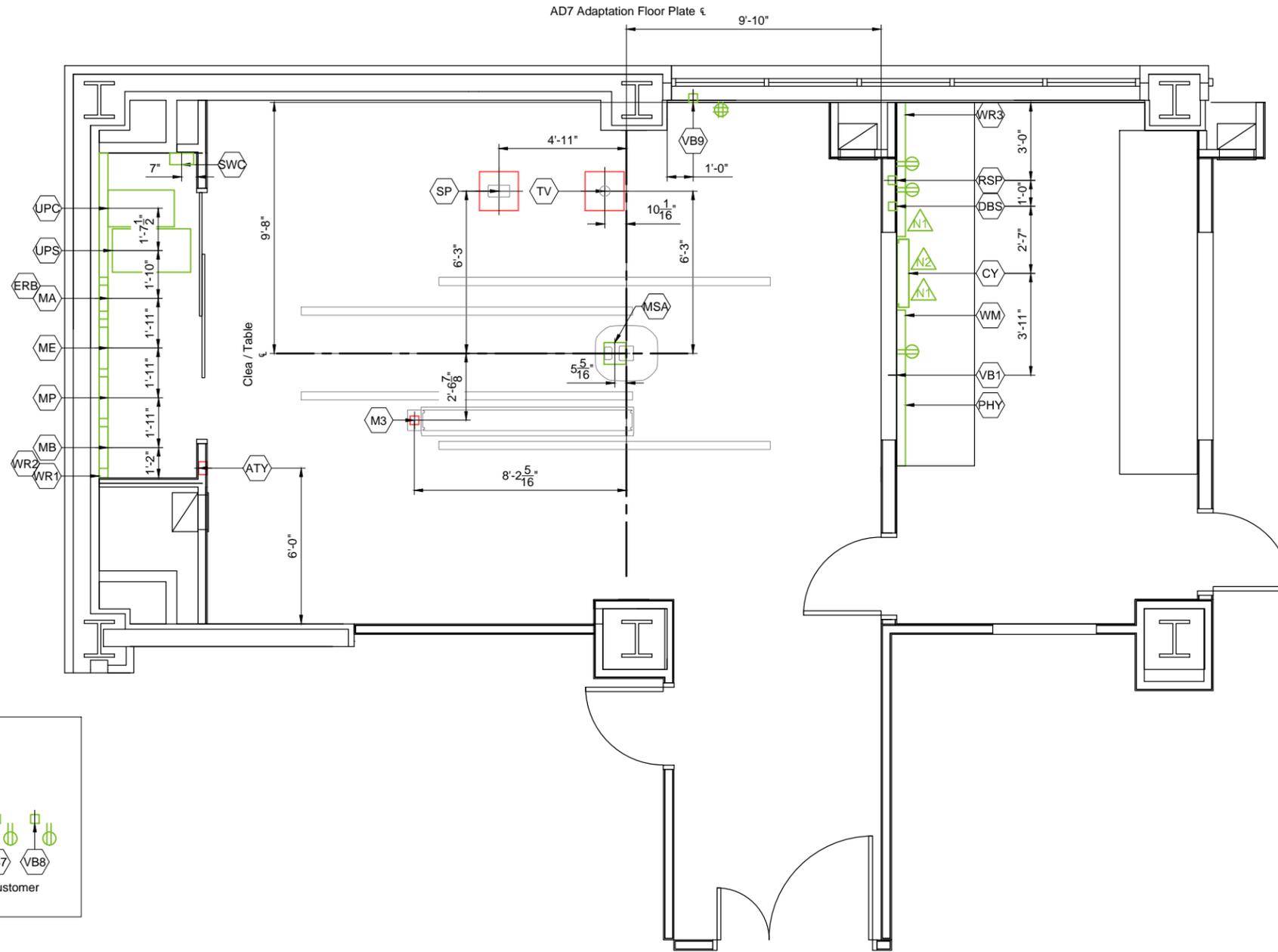
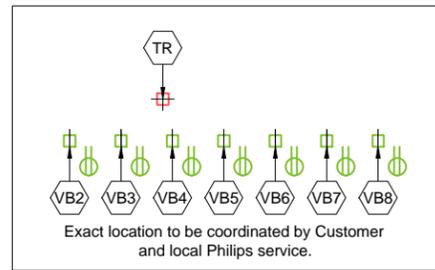
Electrical Legend		
A	Furnished and installed by Philips	
B	Furnished by customer/contractor and installed by customer/contractor	
C	Installed by customer/contractor	
D	Furnished by Philips and installed by contractor	
E	Existing	
F	Future	
G	Optional	
Item Number	Description	Detail Sheet
B CB	480V, 3 phase, Type D 125 A circuit breaker with long-time delay and shunt trip (e.g. Square D HDL36125 or equivalent) . Run power from breaker to "MA", leaving an 8' (2440mm) tail at "MA". See Sheet "ED1" for power quality requirements. Location per local code or owner requirements. (Not shown on plan)	ED1
B ST	Shunt Trip (emergency off) - Large mushroom-head button on remote control station with contacts to operate feature of "CB" (if required by local code or owner, and mandatory for VA and D.O.D installations). (Not shown on plan)	
B GE	Local building steel (i.e. structural steel, cold water pipe > 2" (50mm), ground rod). (Not shown on plan)	
B ERB	Equi-Potential Reference Bar mounted in a 12" (305mm) W x 12" (305mm) H x 4" (105mm) D pull box with hinged cover, surface mounted to the bottom of "WR2" when possible.	ED2
D ME MP MA MB	19 1/4" (490mm) W x 67" (1705mm) H x 4" (105mm) D flanged-edge terminal wall box, surface mounted 75" (1905mm) A.F.F. to top of box. General contractor to cut top and/or bottom of box as required.	ED3
B CY WM VB1	Grommet opening on "WR3". Approximate location shown is recommended and may be changed - verify relocation with local Philips Service.	
B MSA	10" (255mm) W x 10" (255mm) L x 6" (155mm) D floor box, flush mounted with underside of AD7 Adaptation Plate.	
B SP	18" (460mm) W x 18" (460mm) L x 6" (155mm) D ceiling box, flush mounted with removable screw-type cover plate. Provide one 3" (80mm) diameter knockout.	
B TV	18" (460mm) W x 18" (460mm) L x 6" (155mm) D ceiling box, flush mounted with removable screw-type cover plate. Provide a 2 1/2" (65mm) round cutout (Two 2 1/2" (65mm) round cutouts are required for systems with two monitor carriages - verify with local Philips Service).	
B WR1 WR2	10" (255mm) W x 4" (105mm) D wall raceway, surface mounted with removable screw-type cover plate. "WR1" is at finished floor. "WR2" is at 75" (1905mm) A.F.F. to bottom of raceway.	ED3
B WR3	10" (255mm) W x 4" (105mm) D wall raceway, surface mounted with removable screw-type cover plate. "WR3" is at finished floor. "WR3" may need to be cut at the location of the "CY" connection box.	ED3
B PHY	Stub up point for physiological monitoring cables. Run conduit to customer's physiological console location. Contact manufacturer for power requirements, etc.	
B ATY	Auxiliary Box - 6" (155mm) W x 6" (155mm) H x 4" (105mm) D wall box, flush mounted 70" (1780mm) A.F.F. to the bottom of the box with removable screw-type cover plate. Height and location shown are recommended and may be changed - verify height and relocation with local Philips Service.	
B WL	Warning Light - Provide a surface or flush mounted light fixture above door to indicate when X-ray is on, if required by local code or physicist of record. (Not shown on plan)	ED3
B DS	Door Switch - 120V/5A switch limited to open when door is open. Mount in upper corner on strike side of main entry door(s) (Cooper no. 1665 or equivalent), if required by local code or physicist of record. See Sheet "ED3" diagram for connection details. (Not shown on plan)	ED3

Electrical Legend		
A	Furnished and installed by Philips	
B	Furnished by customer/contractor and installed by customer/contractor	
C	Installed by customer/contractor	
D	Furnished by Philips and installed by contractor	
E	Existing	
F	Future	
G	Optional	
Item Number	Description	Detail Sheet
B N1	RJ45 type Ethernet 10/100/1000 Mbit network connector with access to customer's network. Locate within 10' (3050mm) of network card. Network fiber optic and Ethernet cabling, connectors, wall boxes, patch panels, etc. are the responsibility of the purchaser. Philips assumes no responsibility for procurement, installation, or maintenance of these components.	N1
B N2	RJ45 type Ethernet 10/100/1000 Mbit network connector. Access to customer's network via their remote access server is needed for Remote Service Network (RSN) connectivity.	
B IS	120V/20A dedicated duplex outlet for service in the equipment room. (Not shown on plan)	
B	120V/20A dedicated duplex outlet for each of the Video Connection Boxes. Verify electrical requirements for customer provided equipment.	
B VB2 VB3 VB4 VB5 VB6 VB7 VB8 VB9	4" (105mm) W x 4" (105mm) H x 4" (105mm) D pull box with removable screw-type cover plate, flush mounted. Exact height to be determined. Location shown is recommended and may be changed - verify relocation with local Philips Service. LCD on cart must remain within 25' (7.62m) of "VB9".	
B	120V/20A dedicated duplex outlet for DBS (Dose Aware).	
B DBS	4" (105mm) W x 4" (105mm) H x 4" (105mm) D pull box with removable screw-type cover plate, flush mounted. Exact height to be determined. Location shown is recommended and may be changed - verify relocation with local Philips Service.	
D TR	4" (105 mm)W x 4" (105 mm)L x 2 1/2" (65 mm)D box for the transformer used for the M LED 3MC Surgical Light. Location to be determined locally. Recommended location is above the ceiling near the surgical light. Verify location with local Philips Service. Hardwire 115V/20A hospital power to "TR".	AD5
B M3	4" (105 mm)W x 4" (105 mm)L x 2 1/2" (65 mm)D ceiling box, flush mounted with removable screw-type cover plate. Recommended location is near or above the cable spooler.	
B	120V/20A dedicated quadplex outlet for "TV2".	
D UPS	UPS - 25 kVA.	ED4
D UPC	Universal Power Controller - 25 kVA.	ED4
B RSP	Remote Status Panel (wall mounted in the control area) - 4" (105mm) W x 4" (105mm) H x 4" (105mm) D pull box with removable screw-type cover plate, flush mounted. Exact height to be determined. Location shown is recommended and may be changed - verify relocation with local Philips Service.	ED4
B	120V/20A dedicated duplex outlet for RSP (Remote Status Panel)	
D SWC	Knife switch. On/off 3 phase switch rate 480V 100 A with auxiliary contacts rated 1 phase 120V 4 A. Surface mounted 50" (1270mm) above finished floor to bottom of box.	ED4

See E1 - E4 sheets for conduit and raceway requirements.

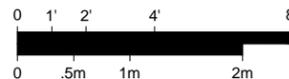
<b>Project</b> Allura FD20 Ceiling  VA Oklahoma City Oklahoma City, OK -Room 1 1st Floor	<b>Philips Contacts</b> Project Manager: John Wright Contact Number: (214) 704-8619 Email: john.wright@philips.com Drawn By: Laura Phillips
	<b>Project Details</b> Drawing Number <b>N-WES140162 C</b> Date Drawn: 11/14/2014 Quote: 1-ZMCS9DA Rev. 2 Order: 6600224430.010000





# Electrical Layout

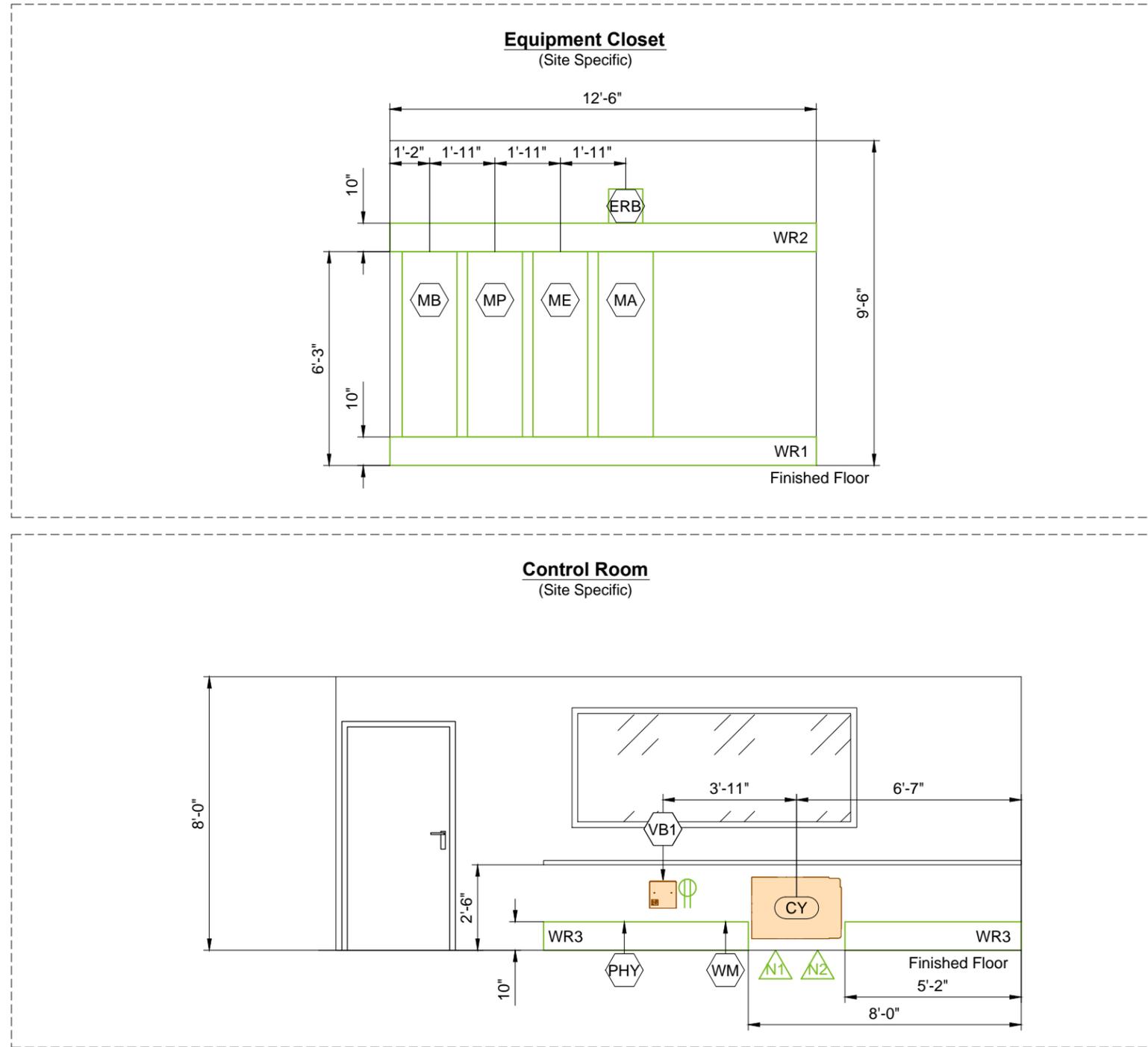
Required Unistrut Height:  $9' - 6 \frac{3}{16}'' + \frac{3}{8}'' / -0$  (2900mm, +10mm / -0)  
 Unistrut height measured from finished floor to bottom of Unistrut.



Refer to Electrical Legend - Sheet EL  
 and Raceway/Conduit - Sheet E2-E4

<b>Project Details</b> Drawing Number <b>N-WES140162 C</b> Date Drawn: 11/14/2014 Quote: 1-ZMC9DA Rev. 2 Order: 6600224430.010000	<b>Philips Contacts</b> Project Manager: John Wright Contact Number: (214) 704-8619 Email: john.wright@philips.com Drawn By: Laura Phillips	<b>Project</b> Allura FD20 Ceiling VA Oklahoma City Oklahoma City, OK -Room 1 1st Floor
	<b>E1</b>	





Note: The use of 90 degree ells is not acceptable. Use 45 degree bends at all raceway corners. For conduit runs, use the minimum bending radius specific to the conduit diameter. The use of crossover tunnels at all applicable locations is required. The above mentioned recommendations will help to ensure the integrity of the cables and fiber optic runs.

- \* **Countertop Height Guide:**  
30" (765mm) for standard seated height.  
36" (915mm) for standard standing height.
- \* **Ensure that the wall junction boxes are mounted perpendicular to the floor.**
- \* **Verify exact ceiling height of Equipment and Control Room Area.**
- \* **Architect to coordinate with end users/technicians to determine final placement of control desk components prior to installation in order to avoid rework. Architect to coordinate with Philips Project Manager to reflect final placement on Philips drawings.**

<b>E2</b>	<b>Project Details</b>	<b>Philips Contacts</b>	<b>Project</b>
	Drawing Number <b>N-WES140162 C</b> Date Drawn: 11/14/2014 Quote: 1-ZMC9DA Rev. 2 Order: 6600224430.010000	Project Manager: John Wright Contact Number: (214) 704-8619 Email: john.wright@philips.com Drawn By: Laura Phillips	<b>Allura FD20 Ceiling</b> <b>VA Oklahoma City</b> Oklahoma City, OK -Room 1 1st Floor

Conduit Required																									
General Notes																									
1. All conduit runs must take most direct route point to point. 2. All conduit runs must have a pull string.																									
A Conduit supplied/installed by contractor - Philips cables installed by Philips B Conduit supplied/installed by contractor - Philips cables installed by contractor C Conduits and cables supplied and installed by contractor D Conduit existing - cables supplied and installed by Philips E Conduit existing - cables supplied by Philips and installed by contractor F Conduit existing - cables supplied and installed by contractor G Optional equipment, verify with local Philips Service																									
<table border="0" style="width: 100%;"> <tr> <td style="width: 50%;"></td> <td style="width: 50%; vertical-align: top;"> <table border="0"> <tr> <td style="border: 1px solid black; padding: 2px;">P</td> <td>Power (AC)</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">D</td> <td>Power (DC)</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">G</td> <td>Ground</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">S</td> <td>Signal</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">H</td> <td>High Tension</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">C</td> <td>Cooling Hose</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">A</td> <td>Air Supply Hose</td> </tr> </table> </td> </tr> </table>											<table border="0"> <tr> <td style="border: 1px solid black; padding: 2px;">P</td> <td>Power (AC)</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">D</td> <td>Power (DC)</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">G</td> <td>Ground</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">S</td> <td>Signal</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">H</td> <td>High Tension</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">C</td> <td>Cooling Hose</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">A</td> <td>Air Supply Hose</td> </tr> </table>	P	Power (AC)	D	Power (DC)	G	Ground	S	Signal	H	High Tension	C	Cooling Hose	A	Air Supply Hose
	<table border="0"> <tr> <td style="border: 1px solid black; padding: 2px;">P</td> <td>Power (AC)</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">D</td> <td>Power (DC)</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">G</td> <td>Ground</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">S</td> <td>Signal</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">H</td> <td>High Tension</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">C</td> <td>Cooling Hose</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">A</td> <td>Air Supply Hose</td> </tr> </table>	P	Power (AC)	D	Power (DC)	G	Ground	S	Signal	H	High Tension	C	Cooling Hose	A	Air Supply Hose										
P	Power (AC)																								
D	Power (DC)																								
G	Ground																								
S	Signal																								
H	High Tension																								
C	Cooling Hose																								
A	Air Supply Hose																								
Run No.	From	To	Conduit Quantity	Cable Type (*)	Minimum Conduit Size	Maximum Conduit Length	Special Requirements																		
C 1	Power Panel	CB	1	P	Per N.E.C.	Per N.E.C.	See conductor/ground size chart.																		
C 2	CB	MA	1	P	2 1/2"	Per N.E.C.																			
C 3	CB	ST	1	P	3/4"	50'																			
C 4	ERB	GE	1	P	3/4"	6'																			
C 5	ERB	Room Outlets	1	P	3/4"	-	See Sheet "ED2" for details.																		
C 6	MA	WL	1	P	3/4"	55'																			
C 7	ATY	DS	1	S	3/4"	55'																			
A 8	ATY	MA	1	S	2 1/2"	41'																			
A 9	ATY	TV	1	S	3/4"	65'																			
A 10	SP	ME	2	C	1 1/2"	44'	Tube Cooling Hoses.																		
A 11	SP	ME	1	P/G	1 1/2"	39'																			
A 12	SP	ME	1	S	1"	39'																			
A 13	SP	ME	1	H	2 1/2"	37'	High Tension Cables.																		
A 14	SP	MP	1	P/G	2"	39'																			
A 15	SP	MP	1	S	2"	39'																			
A 16	SP	MA	1	S	2"	37'																			
A 17	MSA	MA	1	S	2 1/2"	39'																			
A 18	MSA	MP	1	P/G	2"	39'																			
A 19	MSA	MP	1	S	2 1/2"	39'																			
A 20	TV	MA	1	P	1 1/2"	52'																			
A 21	TV	MA	1	S	2 1/2"	52'																			
A 22	TV	MP	1	S	2"	52'																			
A 23	TV	MB	1	S	1 1/2"	52'	For FlexVision XL.																		
A 24	TV	WM	1	S	3/4"	65'	For Intercom.																		
A 25	CY	MP	1	S	2"	50'																			
A 26	CY	MA	1	P/G	1 1/2"	55'																			
A 27	CY	MA	1	S	2 1/2"	55'																			
A 28	MA	WM	1	S	1"	82'																			
C 29	TV	WR3	2	S	1 1/2"	-	For optional equipment (IE. Physio Monitor/ Slave Monitor)																		
C 30	MSA	WR3	2	S	1 1/2"	-	For future options (Patient Monitoring). Verify with local Philips Service if auxiliary box should be used.																		

Conduit Required																									
General Notes																									
1. All conduit runs must take most direct route point to point. 2. All conduit runs must have a pull string.																									
A Conduit supplied/installed by contractor - Philips cables installed by Philips B Conduit supplied/installed by contractor - Philips cables installed by contractor C Conduits and cables supplied and installed by contractor D Conduit existing - cables supplied and installed by Philips E Conduit existing - cables supplied by Philips and installed by contractor F Conduit existing - cables supplied and installed by contractor G Optional equipment, verify with local Philips Service																									
<table border="0" style="width: 100%;"> <tr> <td style="width: 50%;"></td> <td style="width: 50%; vertical-align: top;"> <table border="0"> <tr> <td style="border: 1px solid black; padding: 2px;">P</td> <td>Power (AC)</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">D</td> <td>Power (DC)</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">G</td> <td>Ground</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">S</td> <td>Signal</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">H</td> <td>High Tension</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">C</td> <td>Cooling Hose</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">A</td> <td>Air Supply Hose</td> </tr> </table> </td> </tr> </table>											<table border="0"> <tr> <td style="border: 1px solid black; padding: 2px;">P</td> <td>Power (AC)</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">D</td> <td>Power (DC)</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">G</td> <td>Ground</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">S</td> <td>Signal</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">H</td> <td>High Tension</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">C</td> <td>Cooling Hose</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">A</td> <td>Air Supply Hose</td> </tr> </table>	P	Power (AC)	D	Power (DC)	G	Ground	S	Signal	H	High Tension	C	Cooling Hose	A	Air Supply Hose
	<table border="0"> <tr> <td style="border: 1px solid black; padding: 2px;">P</td> <td>Power (AC)</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">D</td> <td>Power (DC)</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">G</td> <td>Ground</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">S</td> <td>Signal</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">H</td> <td>High Tension</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">C</td> <td>Cooling Hose</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">A</td> <td>Air Supply Hose</td> </tr> </table>	P	Power (AC)	D	Power (DC)	G	Ground	S	Signal	H	High Tension	C	Cooling Hose	A	Air Supply Hose										
P	Power (AC)																								
D	Power (DC)																								
G	Ground																								
S	Signal																								
H	High Tension																								
C	Cooling Hose																								
A	Air Supply Hose																								
Run No.	From	To	Conduit Quantity	Cable Type (*)	Minimum Conduit Size	Maximum Conduit Length	Special Requirements																		
C 31	MSA	PHY	1	S	2 1/2"	-	For future options (Patient Monitoring). Verify with local Philips Service if auxiliary box should be used.																		
G 32	PHY	Physio Monitor	1	S	2"	33'	Optional for remote location.																		
G 33	Third Party	Third Party	-	-	-	-	For Injector, Auxiliary Box, Patient Monitoring, Video Networking, etc.																		
G 34	Third Party	ERB	-	G	-	-	For Injector, Auxiliary Box, Patient Monitoring, Video Networking, etc.																		
A 35	VB1	MB	1	S	1"	82'																			
A 36	VB2	MB	1	S	1"	82'																			
A 37	VB3	MB	1	S	1"	82'																			
A 38	VB4	MB	1	S	1"	82'																			
A 39	VB5	MB	1	S	1"	82'																			
A 40	VB6	MB	1	S	1"	82'																			
A 41	VB7	MB	1	S	1"	82'																			
A 42	VB8	MB	1	S	1"	82'																			
A 43	VB2	CY	1	S	1/2"	91'																			
A 44	VB3	CY	1	S	1/2"	91'																			
A 45	VB4	CY	1	S	1/2"	91'																			
A 46	VB5	CY	1	S	1/2"	91'																			
A 47	VB6	CY	1	S	1/2"	91'																			
A 48	VB7	CY	1	S	1/2"	91'																			
A 49	VB8	CY	1	S	1/2"	91'																			
A 50	WR3	DBS	1	S	2"	-																			
C 51	TR	M3	1	P	3/4"	-	For M LED 3MC Surgical Light.																		
G 52	M3	ERB	1	G	3/4"	-	For M LED 3MC Surgical Light. Per local code.																		
A 53	VB9	MB	1	P	1 1/2"	55'	Monitor on Cart.																		
A 54	VB9	MB	1	S	1 1/2"	55'	Monitor on Cart.																		
C 55	UPS	ST	1	P	3/4"	150'																			
B 56	MA	UPC	1	P	1"	45'																			
B 57	MA	UPC	1	P	1"	45'																			
B 58	MA	UPC	1	P	1"	45'																			
B 59	MA	UPC	1	P	1"	45'																			
B 60	MA	SWC	1	P	1"	45'																			

<b>Project Details</b>	<b>Project</b>
Drawing Number <b>N-WES140162 C</b>	<b>Allura FD20 Ceiling</b>
Date Drawn: 11/14/2014	<b>VA Oklahoma City</b>
Quote: 1-ZMC9DA Rev. 2	<b>Oklahoma City, OK</b>
Order: 6600224430.010000	<b>-Room 1 1st Floor</b>
<b>Philips Contacts</b>	<b>Philips Contacts</b>
Project Manager: John Wright	Project Manager: John Wright
Contact Number: (214) 704-8619	Contact Number: (214) 704-8619
Email: john.wright@philips.com	Email: john.wright@philips.com
Drawn By: Laura Phillips	Drawn By: Laura Phillips



Conduit Required								
General Notes								
1. All conduit runs must take most direct route point to point. 2. All conduit runs must have a pull string.								
A Conduit supplied/installed by contractor - Philips cables installed by Philips B Conduit supplied/installed by contractor - Philips cables installed by contractor C Conduits and cables supplied and installed by contractor D Conduit existing - cables supplied and installed by Philips E Conduit existing - cables supplied by Philips and installed by contractor F Conduit existing - cables supplied and installed by contractor G Optional equipment, verify with local Philips Service								
P Power (AC) D Power (DC) G Ground S Signal H High Tension C Cooling Hose A Air Supply Hose								
Run No.	Conduit		Conduit Quantity	Cable Type (*)	Minimum Conduit Size	Maximum Conduit Length	Special Requirements	
	From	To						
B 61	SWC	UPS	1	P	2"	15'	Flex Conduit	
B 62	UPC	SWC	1	P	2"	15'	Flex Conduit	
B 63	UPC	SWC	1	P	2"	15'	Flex Conduit	
B 64	UPC	UPS	1	P	1"	15'		
B 65	UPC	UPS	1	P	1"	15'		
B 66	UPC	UPS	1	P	1"	15'		
B 67	UPC	UPS	1	P	1"	15'		
B 68	RSP	UPS	1	P	1 1/2"	250'	Remote Status Panel.	

Conduit Required								
General Notes								
1. All conduit runs must take most direct route point to point. 2. All conduit runs must have a pull string.								
A Conduit supplied/installed by contractor - Philips cables installed by Philips B Conduit supplied/installed by contractor - Philips cables installed by contractor C Conduits and cables supplied and installed by contractor D Conduit existing - cables supplied and installed by Philips E Conduit existing - cables supplied by Philips and installed by contractor F Conduit existing - cables supplied and installed by contractor G Optional equipment, verify with local Philips Service								
P Power (AC) D Power (DC) G Ground S Signal H High Tension C Cooling Hose A Air Supply Hose								
Run No.	Conduit		Conduit Quantity	Cable Type (*)	Minimum Conduit Size	Maximum Conduit Length	Special Requirements	
	From	To						

<b>E4</b>	<b>Project Details</b> Drawing Number <b>N-WES140162 C</b> Date Drawn: 11/14/2014 Quote: 1-ZMC9DA Rev. 2 Order: 6600224430.010000	<b>Philips Contacts</b> Project Manager: John Wright Contact Number: (214) 704-8619 Email: john.wright@philips.com Drawn By: Laura Phillips	<b>Project</b> <b>Allura FD20 Ceiling</b> <b>VA Oklahoma City</b> Oklahoma City, OK -Room 1 1st Floor
-----------	--	---	---





### Power Quality Requirements (Mains 40E Cabinet)

<b>Power Output</b>	100kW
<b>Supply Configuration</b>	3 phase, identical 3 wire power and isolated unity ground with bonding conductor, delta (preferred) or wye
<b>Nominal Line Voltage</b>	480 VAC, 60 Hz
<b>Line Voltage Variation</b>	Voltage Variations are never to exceed $\pm 10\%$ when measured using 10 minute mean RMS values with a measurement window of 1 week. At least 95% of all measured 10 minute mean RMS values shall be within $\pm 5\%$ of the configured nominal voltage.
<b>Line Voltage Balance</b>	2% maximum of nominal voltage between phases
<b>Frequency Variation</b>	$\pm 1.0$ Hz
<b>Voltage Surges</b>	To 110% of steady-state voltage 100 msec. Maximum duration, 6 per hour max.
<b>Voltage Sags</b>	To 90% of steady-state voltage 100 msec. Maximum duration, 6 per hour max.
<b>Line Impulses</b>	1000 VPK above phase-neutral RMS absolute maximum. No more than 1 impulse per hour to exceed 500 VPK.
<b>Neutral-Ground Voltage</b>	2.0 volts maximum RMS value
<b>Neutral-Ground Impulses</b>	No more than 1 per hour that exceeds 25 volts and 1 Mjoule
<b>High Frequency Noise</b>	3.0 volts steady-state maximum. Over 3.0 volts permitted for 100 msec. maximum, 1 per hour max.
<b>Grounded Conductor Impedance</b>	0.1 Ohms @ 60 hz. maximum

### Branch Circuit and Wire Gauge Requirements (Mains 40E Cabinet)

<b>Branch Power</b>	225 kVA
<b>Max. Standby Current</b>	8 A @ 3mA, 100 kVP continuous
<b>Circuit Breaker (CB)</b>	3 phase, Type D 125 A with long-time delay and shunt trip
<b>**Conductor/Ground Size Chart: Engineer of record responsible for calculating conductor/ground sizes. Recommended conductor/ground sizes for 1% impedance of supply conductors to circuit breaker (CB). Based on 20°C copper conductors:</b>	
<b>Nominal Line Voltage (in VAC) (60 Hz)</b>	<b>480</b>
1/0 AWG	76.92ft
2/0 AWG	96.74ft
3/0 AWG	121.95ft
4/0 AWG	155.34ft
250 KCM	181.82ft
300 KCM	217.98ft
400 KCM	294.12ft
<b>Max. Instantaneous Power (1000mA @ 100 kVP)</b>	249 kVA
<b>Max. Inst. Current @ CB (RMS value over half-cycle)</b>	300 A
<b>Max. Phase-phase impedance @ CRC</b>	0.465 $\Omega$
<b>Max. Load Voltage Drop @ CB (RMS value over half-cycle)</b>	139.5 V
<b>Output Voltage Mains 40E Cabinet</b>	480 VAC $\pm 10\%$
<b>Max. Inst. Current @ Mains 40E Cabinet output (RM value over half-cycle)</b>	300 A
<b>Max Phase-phase impedance @ Mains 40E Cabinet CRC input terminal</b>	0.545 $\Omega$
<b>Max. Load Voltage Drop @ Mains 40E Cabinet output</b>	163.5 V



**Project**  
Allura FD20 Ceiling

VA Oklahoma City  
Oklahoma City, OK  
-Room 1 1st Floor

**Philips Contacts**

Project Manager: John Wright  
Contact Number: (214) 704-8619  
Email: john.wright@philips.com

Drawn By: Laura Phillips

**Project Details**

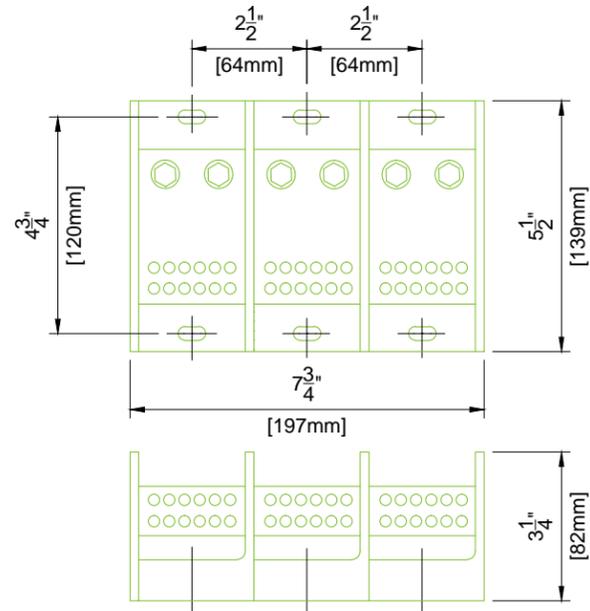
Drawing Number  
**N-WES140162 C**  
Date Drawn: 11/14/2014  
Quote: 1-ZMC9DA Rev. 2  
Order: 6600224430.010000

**ED1**

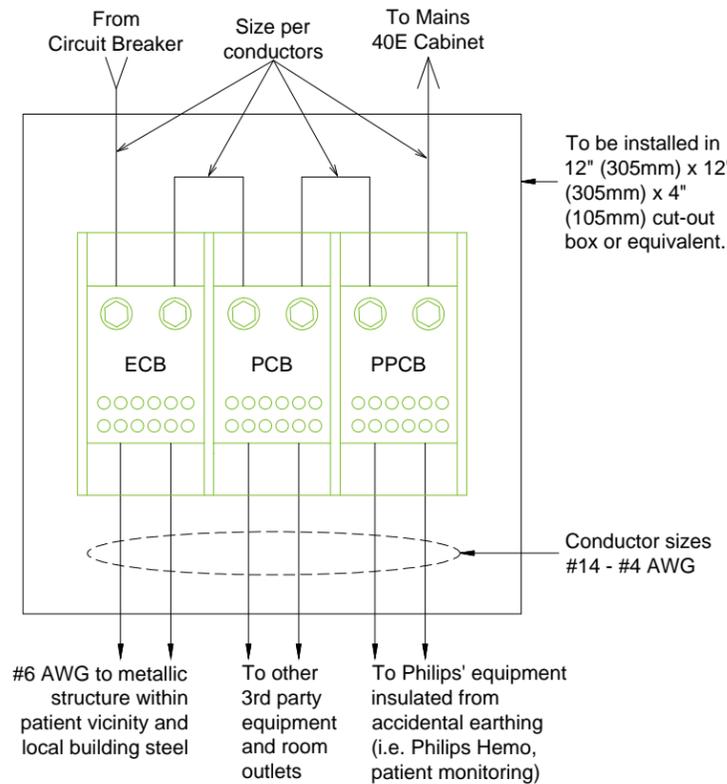


### Detail - Equi-Potential Reference Bar Application

(Not to scale)



1. Furnished and installed by Contractor
2. Purchase from local Ferraz Shawmut distributor, <http://www.ferrazshawmutsales.com/index.htm> Catalog #69143.
3. 62000 - 69000 Series Blocks <http://www.ferrazshawmutsales.com/pdfs/PDB-LARGE.pdf>



### Invasive Procedures

This equipment may be used for invasive procedures; therefore, the area to be installed is classified as critical care area per NFPA-99 and NFPA-70 (NEC). These documents specify maximum touch voltages and ground impedance in these areas.

Test performed by GSSNA service require that these specifications are met by the GSSNA equipment. It is the facility's responsibility to ensure that these specifications are met by the wall outlet, facility structure, and other equipment not installed by GSSNA.

The GSSNA specified "Equi-Potential Reference Bar (ERB)" serves as a ground reference for GSSNA equipment. It may also serve as the "Reference Grounding Point" of the room as defined in NFPA 99-3.3.140 for non-Philips Healthcare equipment.

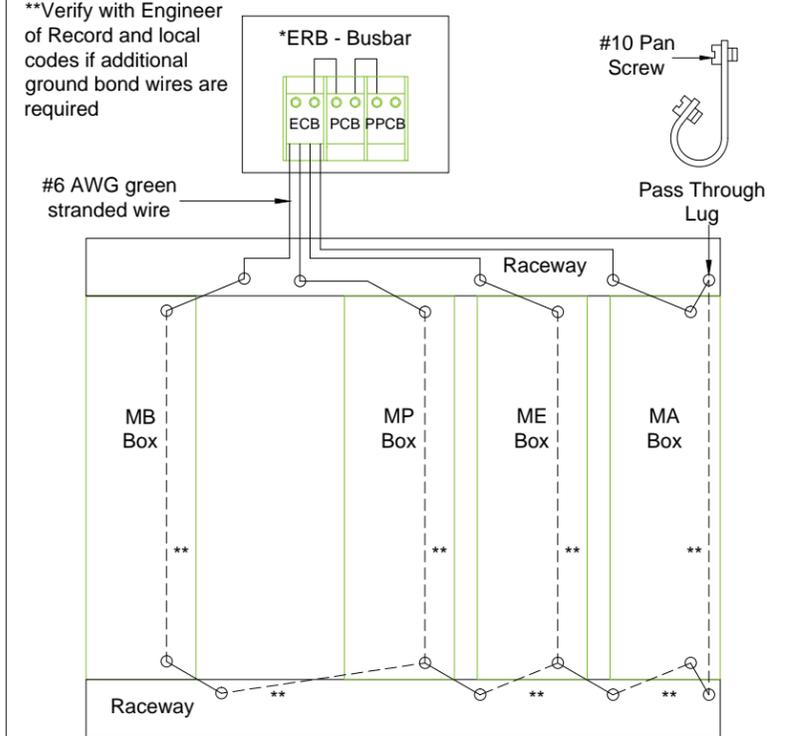
- Equi-Potential Reference Bar (ERB)
- A) Equip-Potential Conductor Bar (ECB)
  - B) Protective Conductor Bar (PCB)
  - C) Philips Protective Conductor Bar (PPCB)

(14.0)

### Detail - Grounding

(Not to scale / Not site specific)

\* ERB to be placed at a reachable height.  
 \*\*Verify with Engineer of Record and local codes if additional ground bond wires are required



(14.1)

**Project**  
 Allura FD20 Ceiling

VA Oklahoma City  
 Oklahoma City, OK  
 -Room 1 1st Floor

**Philips Contacts**

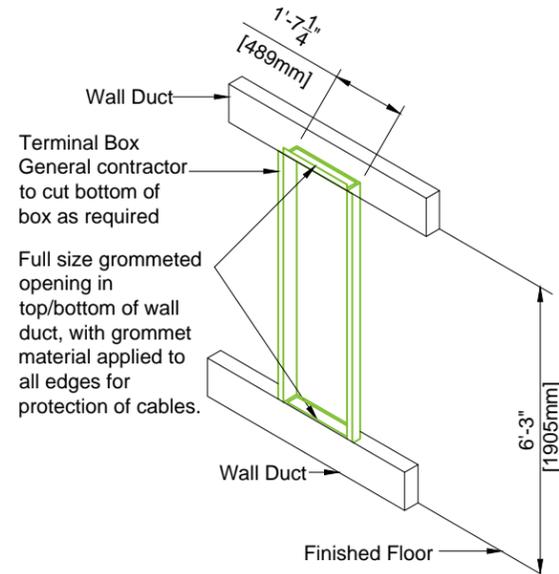
Project Manager: John Wright  
 Contact Number: (214) 704-8619  
 Email: john.wright@philips.com  
 Drawn By: Laura Phillips

**Project Details**

Drawing Number  
**N-WES140162 C**  
 Date Drawn: 11/14/2014  
 Quote: 1-ZMC9DA Rev. 2  
 Order: 6600224430.010000

**ED2**

**Detail - Wall Box Mounting**  
(Not to scale)

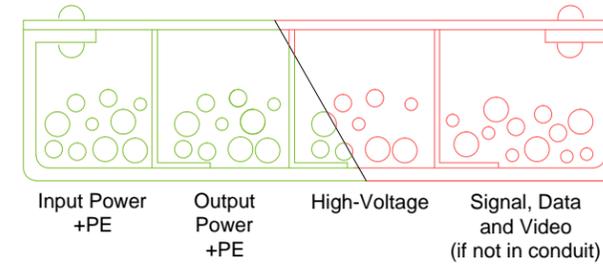


ME MP MA MB

(14.0)

**Detail - Cable Trough Divisions**  
(Not to scale)

- Troughs or ducts must be separated by metal barriers into four sections:
1. Input Power wires and associated PE.
  2. Output Power wires and associated PE.
  3. High-Voltage wires to X-Ray stands.
  4. Signal, data and video cables.

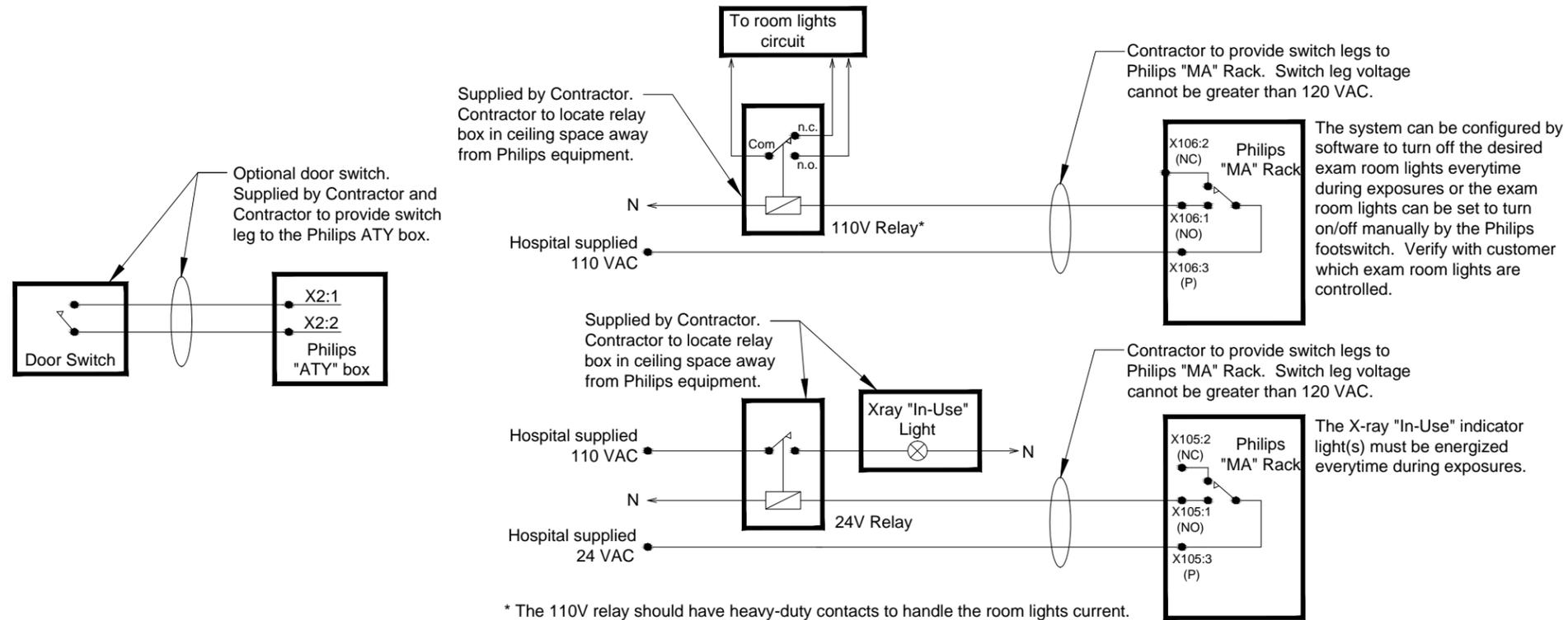


5. It is important that all cables are placed in the appropriate trough and at not given point do any cables from one division cross cables from another. Trough separation must be continuous from the beginning.
6. Trough or ducts: steel with steel dividers grounded to building ground.
7. Contractor to provide cable restraints in all troughs.

WR1 WR2 WR3

(12.0)

**Diagram - Typical Connection of X-Ray In-Use Light, Exam Room Lights, & Door Switch**



WL DS

(14.0)

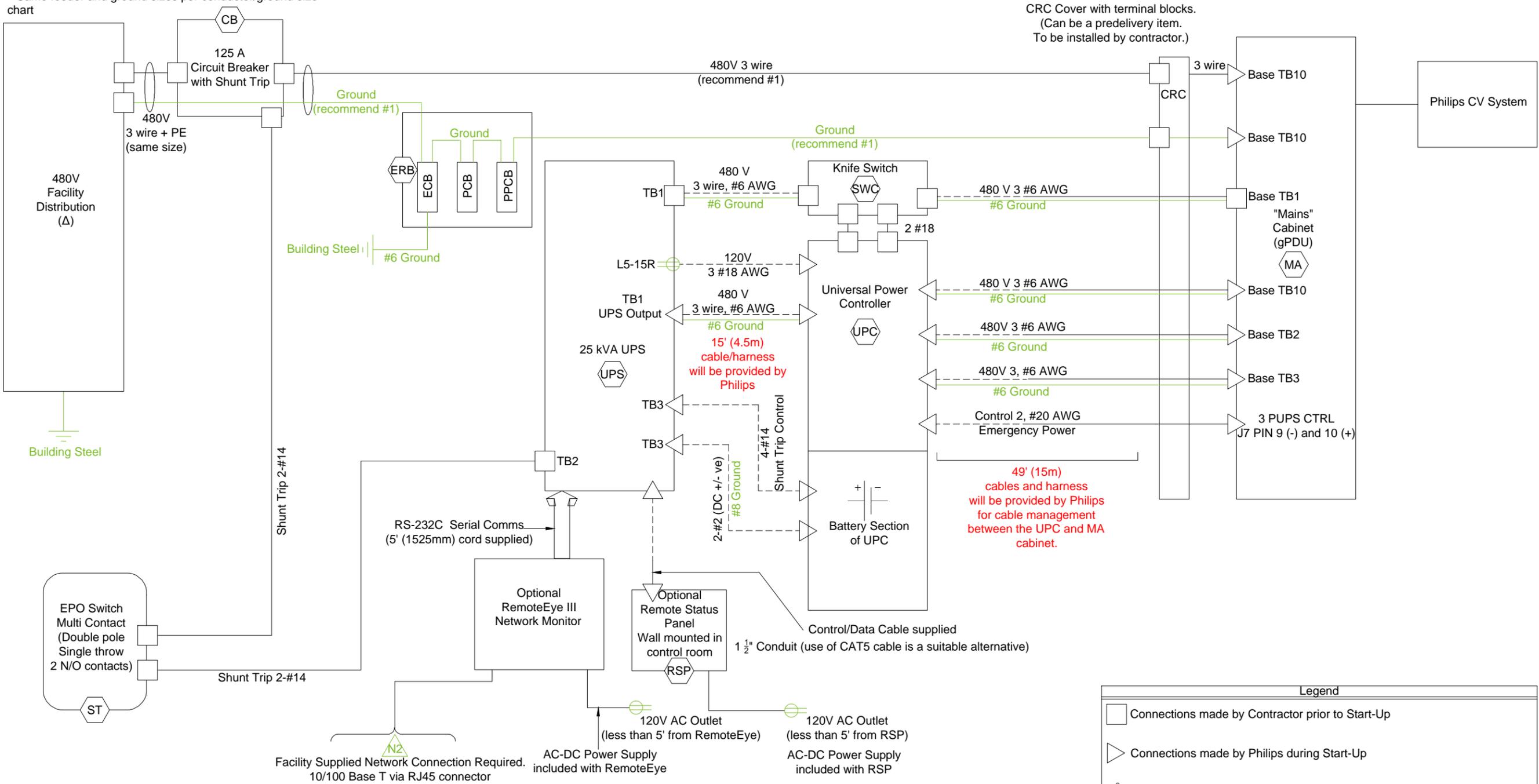
**Project**  
Allura FD20 Ceiling  
VA Oklahoma City  
Oklahoma City, OK  
-Room 1 1st Floor

**Philips Contacts**  
Project Manager: John Wright  
Contact Number: (214) 704-8619  
Email: john.wright@philips.com  
Drawn By: Laura Phillips

**Project Details**  
Drawing Number  
N-WES140162 C  
Date Drawn: 11/14/2014  
Quote: 1-ZMC9DA Rev. 2  
Order: 6600224430.010000

**ED3**

Wiring and circuit sizes from source supply must meet Philips regulation requirements and must be determined by contractor to meet building conditions and local codes.  
 3 Phase, + PE (Protective Earth).  
 \*\*Same feeder and ground sizes per conductor/ground size chart



CRC Cover with terminal blocks.  
 (Can be a predelivery item.  
 To be installed by contractor.)

© Koninklijke Philips Electronics N.V. 2012. All rights reserved. Reproduction in whole or in part is prohibited without prior written consent of the copyright holder.

**IMPORTANT NOTES:**  
 Wire sizes shown to and from UPS and UPC are suitable for distances of up to 49' (15m) however, consider using the UPS/Battery Cabinet/UTS combination in applications where the UPS cannot be installed in close proximity to the MAINS Cabinet (MA). The UPC should be installed as close as possible to these cabinets, ideally in the same equipment room, to minimize runs to these cabinets.

**Note:**  
 All power (system and shunt trip) wires and ground (system and bonding) wires, breakers, and splitters are provided and installed by contractor.

Size of the wires is based on conduit run length shown on conduit sheet, the size of the wire will need to be increased for longer runs.

Conductors, destinations, and number of conduit runs will vary from system to system. Consult individual site plans for detailed conduit schedules.

Contact Philips Zone Power Specialist for detailed wiring diagram.

Legend	
	Connections made by Contractor prior to Start-Up
	Connections made by Philips during Start-Up
	Feed Conductors run together with Ground in conduit
	Supplied Cable Kit
	Conduit, rigid EMT, etc.

<b>Project</b>	Allura FD20 Ceiling
<b>Philips Contacts</b>	Project Manager: John Wright Contact Number: (214) 704-8619 Email: john.wright@philips.com Drawn By: Laura Phillips
<b>Project Details</b>	Drawing Number: N-WES140162 C Date Drawn: 11/14/2014 Quote: 1-ZMC9DA Rev. 2 Order: 6600224430.010000

**PHILIPS**

THE DRAWINGS AND RELATED INSTRUCTIONS PROVIDED BY PHILIPS ARE ACCEPTABLE FOR USE BY THE HOSPITAL'S ARCHITECT OR ENGINEER TO USE FOR THE DEVELOPMENT OF CONSTRUCTION DOCUMENTS.

Diagram - Standard Connection - 25 kVA UPS with UPC

# Philips Healthcare Remote Services Network (RSN)

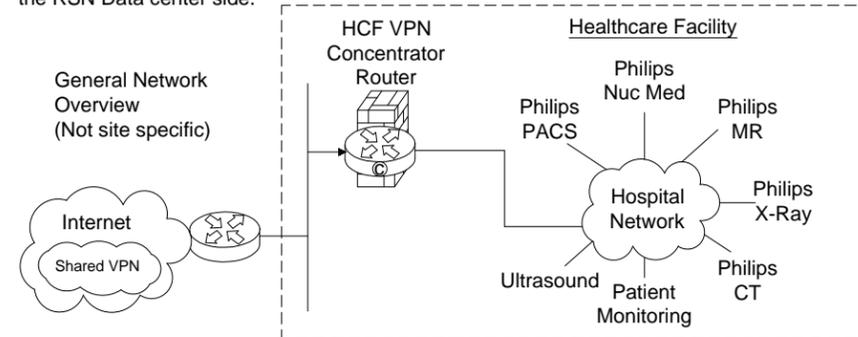
Secure broadband connection required for Philips remote technical support, diagnostics, and applications assistance

## Broadband Site-to-Site Connectivity (Preferred)

This connectivity method is designed for customers who prefer a connection from the RSN Data Center to the Health Care Facility (HCF) utilizing their existing VPN equipment.

### Connectivity Details:

- A Site-to-Site connection from the RSN data center's Cisco router will be established to the HCF's VPN concentrator.
- The VPN Tunnel will be an IPSEC, 3DES encrypted Tunnel using IKE as standard, but alternative standards are also available, such as AES, MD5, SHA, Security Association lifetime and Encryption Mode.
- Every system that we will be servicing remotely will have a static NAT IP that we configure on the RSN Data center side.



### Action Required by Hospital:

- Review and approve connection details.
- Complete appropriate Site Checklist.
- Configure and allow Site-to-Site access prior to setting up connectivity depending on the access criteria that the HCF decides to implement (ex: Source IP filtering, destination IP filtering, NAT assignment, etc.).
- Route traffic from within the hospital network with destination addresses 192.68.48.0/22 to the designed IP provided by Philips.

## Broadband Router Installed at Health Care Facility

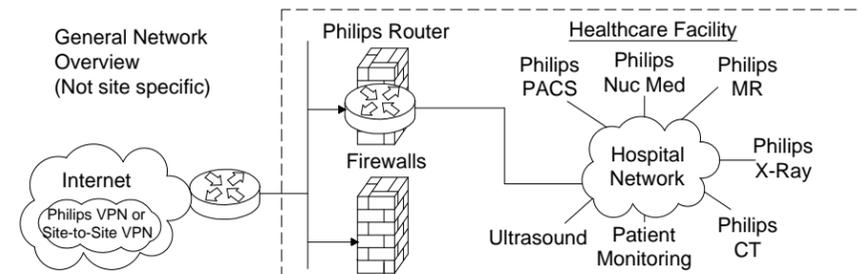
This connectivity method is designed for customers who have a dedicated high speed connection for Philips equipment.

### Connectivity Details:

- An RSN Cisco 1711 or 1712 router will be preconfigured and installed at the HCF by Philips in conjunction with the HCF IT representative.
- The VPN Tunnel will be an IPSEC, 3DES encrypted Tunnel using IKE and will be established from the RSN-DC and terminated at the RSN Router on-site.
- One to One NAT is used to limit access to Philips equipment only.
- Router Config and IP auditing is enabled for Customer IT to view via website 24/7.
- Dedicated DSL connections are also supported.

## Option 1: Parallel to HCF Firewall Connectivity Method

This connectivity method is designed for customers who prefer a Philips RSN Router installed on site utilizing all the security features provided and managed by Philips.

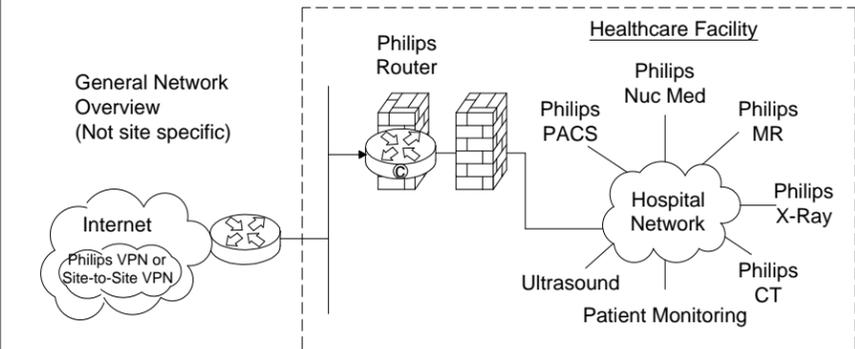


### Action Required by Hospital:

- Assign a fixed public IP Address from the ISP to be configured on the Philips router. This is the DOTTED link on the picture connected to the firewall.
- Assign a Back end IP for the Philips router on the Hospital Network.
- Complete appropriate Site Checklist.
- Route traffic from within the hospital network with destination addresses 192.68.48.0/22 to internal Philips router Ethernet interface. This is the DASHED line connected to the firewall.

## Option 2: Back End Connected to the HCF Firewall Connectivity Method

This connectivity method is designed for customers who prefer a Philips RSN Router installed on site by setting up an IP-Based policy allowing access thru existing HCF Firewall to Philips equipment.

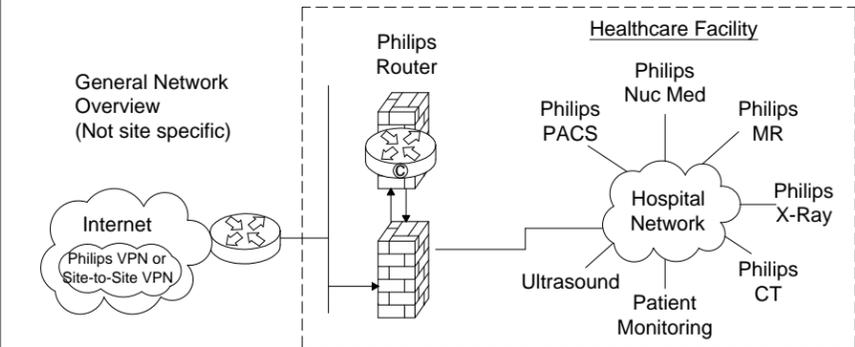


### Action Required by Hospital:

- Assign a fixed public IP Address from the ISP to be configured on the Philips router. This is the DOTTED link on the picture connected to the firewall.
- Assign a Back end IP for the Philips router on the Hospital Network.
- Complete appropriate Site Checklist.
- Route traffic from within the hospital network with destination addresses 192.68.48.0/22 to internal Philips router Ethernet interface. This is the DASHED line connected to the firewall.
- Configure and allow on the firewall on the DASHED line interface access between the IP address allocated by the hospital to the Philips internal Ethernet router interface and the target modality IP address.

## Option 3: Router Installed Inside the HCF's DMZ

This connectivity method is designed for customers who prefer the RSN Router installed inside and existing, or new DMZ, allowing access to Philips equipment.



### Action Required by Hospital:

- Assign a fixed public IP Address from the ISP to be configured on the Philips router. This is the DOTTED link on the picture connected to the firewall.
- Assign a Back end IP for the Philips router on the Hospital Network.
- Complete appropriate Site Checklist.
- Route traffic from within the hospital network with destination addresses 192.68.48.0/22 to internal Philips router Ethernet interface. This is the DASHED line connected to the firewall.
- Configure and allow on the firewall on the DASHED line interface IPsec protocol communication by opening protocol 500, 50, 51, 47 and port 23 + TACACS. Traffic should be between external IP Address located on the Philips router and the RSN Data center IP address 192.68.48/24 and IP address AOSN TACAS.
- Configure and allow on the firewall on the DASHED line interface access between the IP address allocated by the hospital to the Philips internal Ethernet router interface and the target modality IP address.

# System Network Information **IMPORTANT NOTE:** It is the customer's responsibility to coordinate with the local Philips Engineer to provide ALL required network information and install ALL required network cabling & drops according to Philips specifications PRIOR to the scheduled installation start date. Failure to do so may delay system installation and jeopardize the customer hand over date.

<b>Allura</b>	IP Sec [ ]yes [ ]no
Physical Location:	
Hostname:	
MAC Address:	
IP Address	
Netmask:	
Gateway:	
AE Title:	
Port Number (5101):	
<b>XtraVision</b>	IP Sec [ ]yes [ ]no
Physical Location:	
Hostname:	
MAC Address:	
IP Address	
Netmask:	
Gateway:	
AE Title XtraVision:	
Port Number (3110):	
AE Title for X-Ray Mod:	
IP for X-Ray Modality:	
<b>EP Navigator</b>	IP Sec [ ]yes [ ]no
Physical Location:	
Hostname:	
MAC Address:	
IP Address	
Netmask:	
Gateway:	
AE Title:	
Port Number:	
<b>View Forum</b>	IP Sec [ ]yes [ ]no
Physical Location:	
Hostname:	
MAC Address:	
IP Address	
Netmask:	
Gateway:	
AE Title:	
Port Number:	

<b>XperIM</b>	IP Sec [ ]yes [ ]no
	Location 1    Location 2    Location 3
Physical Location:	
Hostname:	
MAC Address:	
IP Address	
Netmask:	
Gateway:	
AE Title:	
Port Number (3010):	
<b>Remote Software Installation (RPS)</b>	
Enable Distribution:	[ ]yes [ ]no
Enable Installation:	[ ]yes [ ]no
<b>Dicom Printer</b>	
	Location 1    Location 2    Location 3    Location 4
Physical Location:	
Hostname:	
IP Address	
AE Title:	
Port Number :	
<b>PACS</b>	Physical Location:
	Store/Import 1    Store/Import 2    Store/Export    Query/Retrieve    Storage/Commit
Hostname:	
IP Address	
AE Title:	
Port Number :	
<b>PACS</b>	Physical Location:
	Store/Import 1    Store/Import 2    Store/Export    Query/Retrieve    Storage/Commit
Hostname:	
IP Address	
AE Title:	
Port Number :	
<b>Audit Trail</b>	
Physical Location:	
Hostname:	
IP Address	
AE Title:	
Port Number :	

<b>Time Synchronization</b>			
Physical Location:			
Server Name:			
<b>RIS</b>	<b>Physical Location:</b>		
	Basic Local RIS	WLM	MPPS
Hostname:			
IP Address:			
AE Title:			
Max PDU Size:	16384 or		
Port Number:		[ ]yes [ ]no	[ ]yes [ ]no
Secure Node:		[ ]yes [ ]no	[ ]yes [ ]no
Encryption:			
Certificate Name:			
PPSM IHE Compatible:			[ ]yes [ ]no
<b>Time Synchronization</b>			
Allura Xper:	20/21(ftp), 80(http), 443(https), 5900(vnc), 9903(fsf.net)		
Allura CV20:	20/21(ftp), 80(http), 4440(fsf)		
XtraVision:	20/21(ftp), 80(http), 443(https), 5660(ist/ice), 5900(vnc), 9905(lots)		
EP Navigator (R3):	20/21(ftp), 443(https), 5660(ist/ice), 9055(lots)		
EP Cockpit (R1.2):	20/21(ftp), 80(http), 443(https), 5900(vnc), 9903(fsf.net)		
CX50:			
Xper IM:			
View Forum			
<b>Hospital Network</b>			
	M2M Server (PRS)	Proxy	ePO Server (PRS)
Scheme (https):			
IP Address (192.68.49.50):			
Portnumber (443):			
Use Proxy Server:	[ ]yes [ ]no		
IP Address			
Port Number:			
User Name:			
Password:			

PHILIPS

<b>Project</b>	<b>Allura FD20 Ceiling</b> <b>VA Oklahoma City</b> Oklahoma City, OK -Room 1 1st Floor
<b>Philips Contacts</b>	Project Manager: John Wright Contact Number: (214) 704-8619 Email: john.wright@philips.com Drawn By: Laura Phillips
<b>Project Details</b>	Drawing Number <b>N-WES140162 C</b> Date Drawn: 11/14/2014 Quote: 1-ZMC9DA Rev. 2 Order: 6600224430.010000
N2	

**Instructions**

This form is to be used by Project Manager, Contractor and Service Engineer.

Information is used to develop and determine site ready date.

Items listed are go/no go items for delivery unless noted as delay only items.

Items identified with \*\*\* as delayed items must be completed after hours or on weekend. These items cannot be accomplished while installation is in progress. Also, these items must be completed within two days of installation start or they may stop installation.

**Site Readiness Checklist**

Modality: \_\_\_\_\_

Order: \_\_\_\_\_

Site Name: \_\_\_\_\_

Location: \_\_\_\_\_

Contact Name: \_\_\_\_\_

Contact Phone Number \_\_\_\_\_

- Customer site preparation verified in general against the Philips final planning drawings.
- Walls finished including painting.
- Doors installed.
- Floor leveled according to Philips drawings and specifications.
- Floors are tiled/covered finished. Flooring is covered with protective covering (scratch protection).
- Ceiling lights installed.
- Cable conduit and ductwork installed and clean. Position checked. Duct covers in place but not finally closed. Cable opening are clear, without sharp edges. Pull strings in conduit. Installation per Philips specifications.
- HVAC environmental equipment installed and working according to Philips specifications.
- Ceiling installation completed.
- Electrical preparation according to Philips specifications.
- All network cabling, drops installed according to Philips specifications (including hardcopy cameras).
- All pre-cabling identified on Philips drawings has been installed.
- Pre-move survey completed - Delivery route identified.
- Lead glass installed \*\*\*.
- X-Ray warning lights installed \*\*\*.
- Dedicated phone line for modem use\*\*\*.
- Room has been cleaned \*\*\*.
- Cabinets and casework installed (with insulation and building steel) according Philips specifications\*\*\*.
- RSN survey completed and submitted
- Philips RSN Champion contacted.

Approved for Delivery

Project Manager \_\_\_\_\_ Date

Service Engineer \_\_\_\_\_ Date

**Items Specific for the Cardio/Vascular Modality**

- Unistrut installed and level according to Philips specifications.
- Floor plates installed and level according to Philips specifications.
- All cover plates have holes punched and nipples required and bushings installed.
- Emergency power requirements installed according to Philips specifications.
- Building steel ground installed to ECB section of ERB.
- Non-Philips provided room electrical equipment grounds installed to PCB middle section of ERB.
- Conduit lengths measured according to Philips specifications. Note: Specifications is from source box to destination box (not just conduit run length).
- Routing of ductwork and conduits must be installed according to Philips specifications.

© Koninklijke Philips Electronics N.V. 2012. All rights reserved. Reproduction in whole or in part is prohibited without prior written consent of the copyright holder.



<b>Project Details</b> Drawing Number <b>N-WES140162 C</b> Date Drawn: 11/14/2014 Quote: 1-ZMC9DA Rev. 2 Order: 6600224430.010000	<b>Philips Contacts</b> Project Manager: John Wright Contact Number: (214) 704-8619 Email: john.wright@philips.com Drawn By: Laura Phillips	<b>Project</b> <b>Allura FD20 Ceiling</b> <b>VA Oklahoma City</b> Oklahoma City, OK -Room 1 1st Floor	<b>CHK</b>
--	---	---	------------